Application of the analysis ...

$$\Delta H_{exper} = \sqrt{(\Delta H_b)^2 + (\Delta H_i)^2} \quad (4)$$

and is determined by the width ΔH_b of unresolved hyperfine structure or by the width ΔH_i of individual component. For most aromatic radicals ΔH_i is not greater than 1 to 2 Oe. In that case, ΔH_b is given by

$$\Delta H_b = \frac{l}{\sqrt{2(n-1)}} \quad (2)$$

where n is the number of protons interacting with unpaired electron and l a factor depending on the length of the spectrum. The results of the measurements of component number and line width and also determinations of the number of units in which the delocalizations are small in relation to the molecular dimensions. Examination of anions I and II in the table shows that the presence of one conjugated system does not always give high frequencies of delocalization in a molecule. The frequency of delocalization of an unpaired electron in a polymer molecule, which is not in

conjunction in the main chain is less than 10^7.1/sec. For some polymers, however, there are high frequencies of exchange. In the spectrum of the polystilbene anion m.wt. 1300 and for some samples of polysterene there is a narrow central line, which may be connected with the appearance in separate molecules of high exchange frequencies. This may be a consequence of the formation in these polymers of some ordered arrangement of polymeric units. There are 2 figures, 1 table and 7 references: 5 Soviet-bloc and 2 non-Soviet-bloc. The two references to English language publications read as follows: Ref.4: H.M.McConnell. Chem. Phys., v.33, 1960, 115; Ref.5: H.M.McConnell. Chem. Phys. v.35, 1961, 508.

SUBMITTED: November 23, 1960

38129
S/020/62/144/003/026/030
B124/B101

5.4500

AUTHORS: Shelimov, B. N., Fok, N. V., and Voyevodskiy, V. V., Corresponding Member of the AS USSR

TITLE: The benzene-photosensitized low-temperature decomposition of hydrocarbons

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 144, no. 3, 1962, 596-599

TEXT: As has been shown earlier, the product from photochemical decomposition of benzene (I), irradiated by ultraviolet light at 77°K in transparent organic glasses is a substituted hexatriene (II) $H_2C=CH-CH=CH-CH=CH-R$ (HR being the hydrocarbon medium in which photolysis is performed), and alkyl radicals are formed in addition. As the formation of alkyl radicals cannot be explained by the reactions hitherto assumed, this and the formation of gaseous products was studied from the epr spectra. Solid-phase reactions of I in methyl cyclohexane (III) and 3-methyl pentane (IV) were studied with concentrations ranging from $1.8 \cdot 10^{-3}$ to $2.1 \cdot 10^{-k}$ mole/liter. The mercury vapor lamp ПРК-7 (PRK-7) was used as the radiation source. After irradiation, the solution was

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The benzene-photosensitized ...

defrosted, then recooled to 77°K, the gas pressure measured and the gas collected for mass-spectrometric analysis. The irradiated solution was subsequently diluted with n-pentane (V) and the amount of II formed by radiation was measured spectrophotometrically at 275 mμ. The epr spectra of the irradiated solutions of I in III were found to be identical to that of the methyl cyclohexyl radical obtained by radiation of frozen (III) with fast electrons. The spectrum of solutions of I in IV consists of 6 high-resolution, hyperfine structure components with a uniform pattern splitting of about 24 oerst which is probably due to the

$CH_3-CH_2-\dot{C}(CH_3)-CH_2-CH_3$ radical formed by splitting off one H atom from the tertiary C atom of IV. When I is irradiated in IV, H forms, in addition to the R-substituted II, while C_6D_6 yields small amounts of HD in addition to H_2 in the same hydrocarbon. The simultaneous formation of alkyl radicals is obviously due to the decomposition of the hydrocarbon photosensitized by I. The most important feature of the reaction is that the energy of the light quantum absorbed by I (112 kcal/mole) is transferred, all or in part, to the hydrocarbon molecule, which results in splittir-

Card 2/3

The benzene-photosensitized ...

off one C-H bond, whilst the I molecule returns from its excited to the original unexcited state. Neither $C_6H_5^{\cdot}$;($C_6D_5^{\cdot}$) in the epr spectra nor diphenyl in the reaction products could be detected. Thus, the reaction due to ultraviolet radiation proceeds in two steps: (1) formation of substituted II, and (2) the I-photosensitized decomposition of the hydrocarbon leading to the formation of hydrocarbon radicals and of H_2. The yields of II and radicals are maximum with I or C_6D_6 concentrations of $1.6 \cdot 10^{-1}$ and $6.0 \cdot 10^{-2}$ moles/liter, respectively. The yield of II increases 4.2-fold, when the concentration of I is increased from $1.8 \cdot 10^{-3}$ to $1.6 \cdot 10^{-1}$ moles/liter, while the increase of yield of radicals is only 1.2-fold; with C_6D_6, the relative increase is 2.3 and 1.1 fold. There are 3 figures and 1 table.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova (Moscow State University imeni M. V. Lomonosov); Institut kinetiki i goreniya Sibirskogo otdeleniya Akademii nauk SSSR (Institute of Kinetics and Combustion of the Siberian Department of the Academy of Sciences USSR)

SUBMITTED: February 24, 1962

SOLODOVNIKOV, Stanislav Panteleymonovich; VOYEVODSKIY, V.V., otv. red.; TARASENKO, V.M., red.izd-va; GUS'KOVA, O.M., tekhn. red.

[Signals from the microcosm; magnetic resonance] Signaly iz mikromira; magnitnyi rezonans. Moskva, Izd-vo AN SSSR. 1963. 84 p. (MIRA 17:2)

1. Chlen-korrespondent AN SSSR (for Voyevodskiy).

SHELIMOV, B.N.; FOK, N.V.; VOYEVODSKIY, V.V.

Photochemical decomposition of alcohols at low temperatures. Kinetics of methyl alcohol decomposition. Kin. i kat. 4 no. 4:539-548 Jl-Ag '63. (MIRA 16:11)

1. Moskovskiy gosudarstvennyy universitet imeni M.V.Lomonosova, khimicheskiy fakul'tet i Institut khimicheskoy fiziki AN SSSR.

MOLIN, Yu.N.; CHKEIDZE, I.I.; KAPLAN, Ye.P.; BUBEN, N.Ya.; VOYEVODSKIY, V.V.

Formation of radicals in the radiolysis of solid organic substances. Part 2: Yield of radicals in benzene and biphenyl derivatives. Kin. i kat. 4 no.4:557-560 Jl-Ag '63. (MIRA 16:11)

1. Institut khimicheskoy fiziki AN SSSR, Institut khimicheskoy organicheskoy khimii AN SSSR.

LEBEDEV, Ya.S.; TSVETKOV, Yu.D.; VOYEVODSKIY, V.V.

Free radical reactions in irradiated polytetrafluoroethylene. Part 4: Reactions of fluoroalkyl radicals with molecules from the gaseous phase. Vysokom. soed. 5 no.10:1500-1506 O '63. (MIRA 17:1)

1. Institut khimicheskoy fiziki AN SSSR i Institut khimicheskoy kinetiki i goreniya Sibirskogo otdeleniya AN SSSR.

LEBEDEV, Ya.S.; TSVETKOV, Yu.D.; VOYEVODSKIY, V.V.

Free radical reactions in irradiated polytetrafluoroethylene. Part 5: Discussion of the reaction mechanism. Vysokom.soed. 5 no.11:1608-1614 N '63. (MIRA 17:1)

1. Institut khimicheskoy fiziki AN SSSR i Institut khimicheskoy kinetiki i goreniya Sibirskogo otdeleniya AN SSSR.

FOK, N.V., SHELIMOV, B.N., VOYEVODSKIY, V.V.

"On the photosensitized decomposition of hydrocarbons by benzene and its derivatives at low temperature."

Report submitted to the Sixth Intl. Symp. on Free Radicals, Cambridge, England 2-5 July 1963

VOYEVODSKIY, Vladislav Vladislavovich

"Application of the electronspin resonance method in heterogeneous catalysis".

Report to be submitted at the Third International Congress on Catalysis, (IUPAC), Amsterdam, Netherlands, 20-25 Jul 64.

VOYEVODSKIY, V. V.; SOLOUKHIN, R. I.

"On the mechanism and explosion limits of hydrogen and oxygen chain self-ignition in shock waves."

report presented at the 10th Intl Combustion Symp, Cambridge, UK, 17-21 Aug 64.

Novosibirsk Univ.

VOYEVODSKIY, Vladislav Vladislavovich

"Application of the electron-spin resonance method in heterogeneous catalysis."

report submitted to 3rd Intl Cong on Catalysis, Amsterdam, 20-25 Jul 64.

BLYUMENFEL'D, L.A.; VOYEVODSKIY, V.V.; SOLODOVNIKOV, S.P.

Nature of ion radicals formed during interaction of potassium and sodium with some aromatic hydrocarbons. Izv.AN SSSR. Ser.khim. no.1:158-160 Ja '64. (MIRA 17:4)

1. Institut khimicheskoy fiziki AN SSSR.

VINOGRADOVA, V.G.; SHELIMOV, B.N.; FOK,N.V.; VOYEVODSKIY, V.V.

Low temperature decomposition of hydrocarbons photosensibilized by some benzene derivatives. Dokl. AN SSSR 154 no.1:188-190 Ja'64. (MIRA 17:2)

1. Moskovskiy gosudarstvennyy universitet im. M.V. Lomonosova i Institut khimicheskoy fiziki AN SSSR. 2. Chlen-korrespondent AN SSSR (for Voyevodskiy).

VOYEVODSKIY, V.V.

Inhibition of paraffin cracking in the gas phase. Kin. i kat. 5 no.4: 603-608 Jl-Ag '64. (MIRA 17:11)

1. Institut khimicheskoy kinetiki i goreniya Sibirskogo otdeleniya AN SSSR.

VOYEVODSKIY, V.V.

Chemical transformations at low temperatures. Vest. AN SSSR 34 no. 2:56-62 F '64. (MIRA 17:5)

1. Chlen-korrespondent AN SSSR.

BUBNOV, N.N.; BAZHIN, N.M.; VOYEVODSKIY, V.V.

Photosensitized decomposition of saturated hydrocarbons and alcohols in the solide phase. Kin. i kat. 5 no.2:357 Mr-Ap '64. (MIRA 17:8)

1. Institut khimicheskoy kinetiki i goreniya Sibirskogo otdeleniya AN SSSR.

BAKH, N. A.; VOYEVODSKIY, V. V.; GOLDANSKIY, V. I.; SHTAN, A. S.

"Use of powerful radiation sources in chemical investigations."

report submitted for 3rd Intl Conf, Peaceful Uses of Atomic Energy, Geneva, 31 Aug-9 Sep 64.

ACCESSION NR: AP4010761 S/0020/64/154/001/0188/0190

AUTHOR: Vinogradova, V. G.; Shelimov, B. N.; Fok, N. V.; Voyevodskiy, V. V. (Corresponding member)

TITLE: Photosensitization decomposition of hydrocarbons at low temperatures by benzene derivatives

SOURCE: AN SSSR. Doklady, v. 154, no. 1, 1964, 188-190

TOPIC TAGS: benzene derivative, hydrocarbon, aromatic hydrocarbon, hydrocarbon decomposition, photosensitized decomposition, toluene, ethylbenzene, iso-propylbenzene, p xylene, diphenylmethane, chlorobenzene, triphenylmethane, fluorobenzene, acetophenone, ultraviolet light, o xylene, m xylene

ABSTRACT: Diluted solutions of benzene derivatives, such as toluene, ethylbenzene, iso-propylbenzene, o, m and p-xylene, diphenylmethane, triphenylmethane, fluorobenzene, chlorobenzene and acetophenone in 3-methyl pentane and deuterium-containing 3-methyl pentane were subjected to ultraviolet light at 77 C. Hydrogen was isolated and 3-

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ACCESSION NR: AP4010761

ASSOCIATION: Moskovskiy gosudarstvennyky universitet im. M.V. Lomonosova (Moscow State University), Institut khimicheskoy fiziki, AN SSSR (Institute of Chemical Physics, AN SSSR)

SUBMITTED: 03Sep63 DATE ACQ: 10Feb64 ENCL: 00

SUB CODE: OC NR REF SOV: 004 OTHER: 011

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ACCESSION NR: AP4010761

methylpentyl radicals were formed in all cases except in C_6H_5F, C_6H_5Cl and C_6H_5COCH solutions. The initial rate of H_2 evolution was measured and related to the concentration of the triplet state of aromatic molecules. The data agrees with the assumption that molecules of aromatic compounds in the triplet state participate in the photosensitization reaction. The energy of the triplet levels of the aromatic compounds is not higher than 78-85 kcal/mole. The relationship between the rate of the formation of hydrogen and alkyl radicals for toluene and benzene solutions depending on light intensity is investigated and the data are tabulated. The longer life of aromatic molecules in the excited triplet state makes it possible to absorb one more light quantum while passing to the higher triplet level, and owing to the energy excess (as compared to the energy needed to rupture the CH links) causes the photosensitization decomposition of the solvent molecules. Orig. art. has: 1 table.

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ODINTSOVA, S.P.; SHELIMOV, B.N.; FOK, N.V.; VOYEVODSKIY, V.V.

Temperature dependence of the rates of benzene photochemical reactions in hydrocarbon solutions. Izv. AN SSSR. Ser.khim. no.3:572-574 Mr '64. (MIRA 17:4)

1. Moskovskiy gosudarstvennyy universitet im. M.V.Lomonosova i Institut khimicheskoy fiziki AN SSSR.

ACCESSION NR: AP4025906 S/0030/64/000/002/0056/0062

AUTHOR: Voyevodskiy, V. V. (Corresponding member)

TITLE: Chemical transformations at low temperatures

SOURCE: AN SSSR. Vestnik, no. 2, 1964, 56-62

TOPIC TAGS: chemical transformation, low temperature, solid phase, stereospecificity, radiation polymerization, frozen monomer, free radical

ABSTRACT: This brief review deals mainly with radiation-chemical transformations and the reactions of free radicals in the solid phase at low temperatures. An essential role in the revival of interest in low temperature reactions is due to the observation that polymers obtained at these low temperatures possess stereospecificity, as exemplified by the formaldehyde and acetaldehyde polymers, the melting points of which are -117 and -123C, respectively. In the field of radiation polymerization of frozen monomers, it was suggested that the extremely rapid onset of the polymerization process was due to some kind of broaching of the strictly geometrically oriented molecules of the monomer by an initially formed active center. The mobility of components of solid frozen organic compounds, such as the

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ACCESSION NR: AP4025906

rotation of methyl groups, was revealed by the electron paramagnetic resonance technique at the temperature of liquid nitrogen. The molecule of cyclohexane is known to undergo rotation around three main axes at -87C. The dependence of the reaction rate on the frequency of intramolecular shifts in the solid state is stressed, and the role of the magnitude of the factor $e^{-E/RT}$ is emphasized. Its significance, however, disappears where ionizing radiation is brought in. The cleavage of chemical bonds and the formation of free radicals are now becoming of prime importance. The formation of molecular hydrogen is an invariable consequence in radiochemical transformations of most solid hydrocarbons. The free radicals, in turn, can undergo a series of transformations and may also bring about a kind of cross linkage, causing the so-called radiation vulcanization, a process already used by industry. By a proper application of low temperatures it is possible to "freeze" the process at a desired level, without permitting secondary reactions to take place. At the Institut khimicheskoy fiziki Akademii nauk SSSR (Institute of Chemical Physics, Academy of Sciences SSSR), a special spectrometer was constructed which permits determination of the structure of free radicals and their concentration during the process of irradiation with fast electrons. The technique revealed that the saturated hydrocarbons are 20-30 times less resistant

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ACCESSION NR: AP4025906

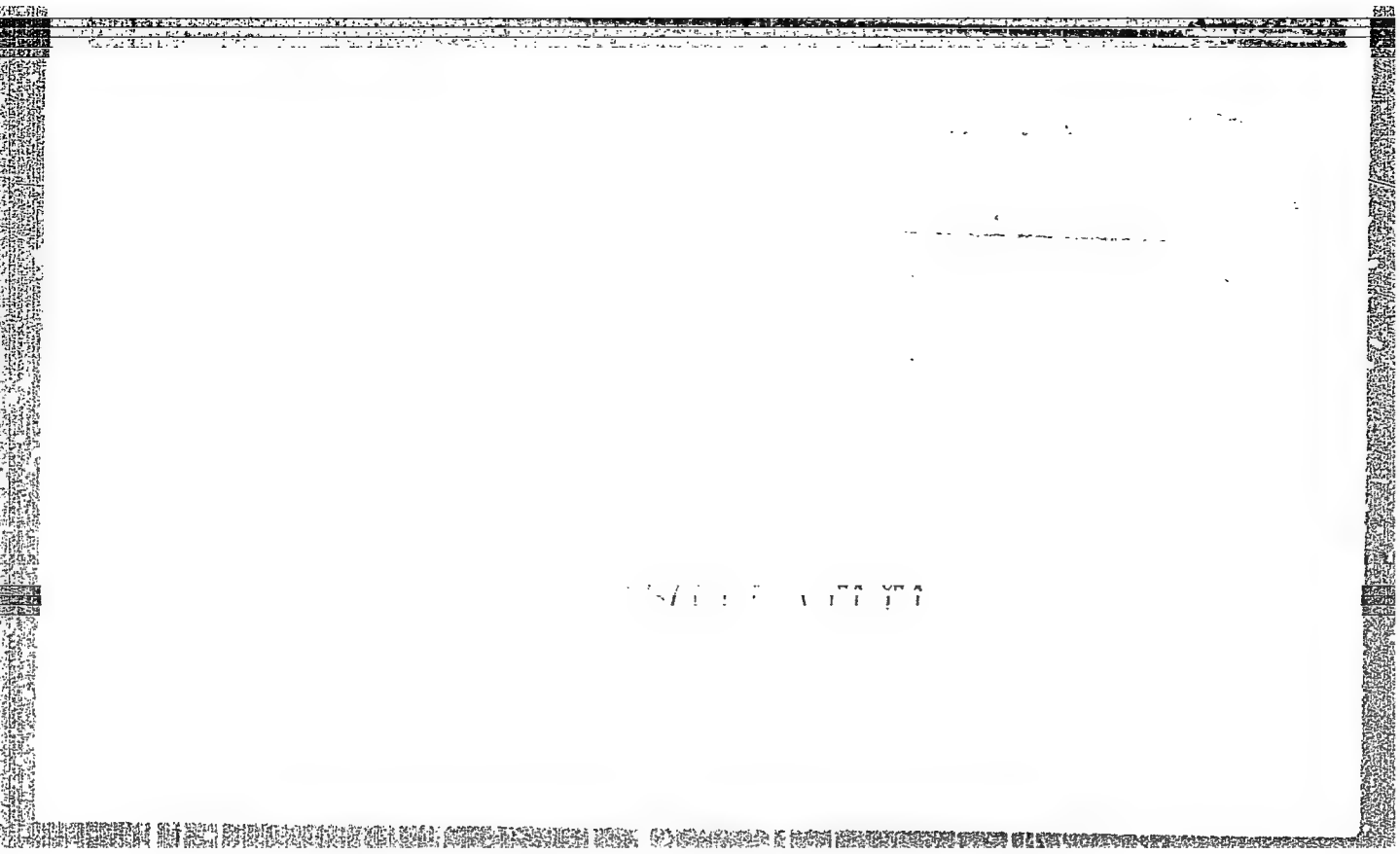
to the effect of ionizing radiation than benzene, while the ter-phenyls and some other highly conjugated systems are 10-20 times more resistant.. Insight has been gained into the mechanism of the interaction of the huge quantums of radiant energy with the molecules of the irradiated substrate. It was found that the excitation energy is actually capable of being transported within a solid phase, not only within a single molecule but also between neighboring molecules. The author describes a kind of collective state of excitation (excitone) in irradiated materials, involving a large number of bonds. Electron transport presumably also occurs in irradiated solid systems. The possibility of stabilization and accumulation of free radicals in systems at low temperatures has been verified. At 77K the atoms of hydrogen in a hydrocarbon attain such high mobility that they react instantaneously with radicals or other hydrogen atoms. The constants of rate and activation energy of free radicals in irradiated systems at low temperatures have been determined.

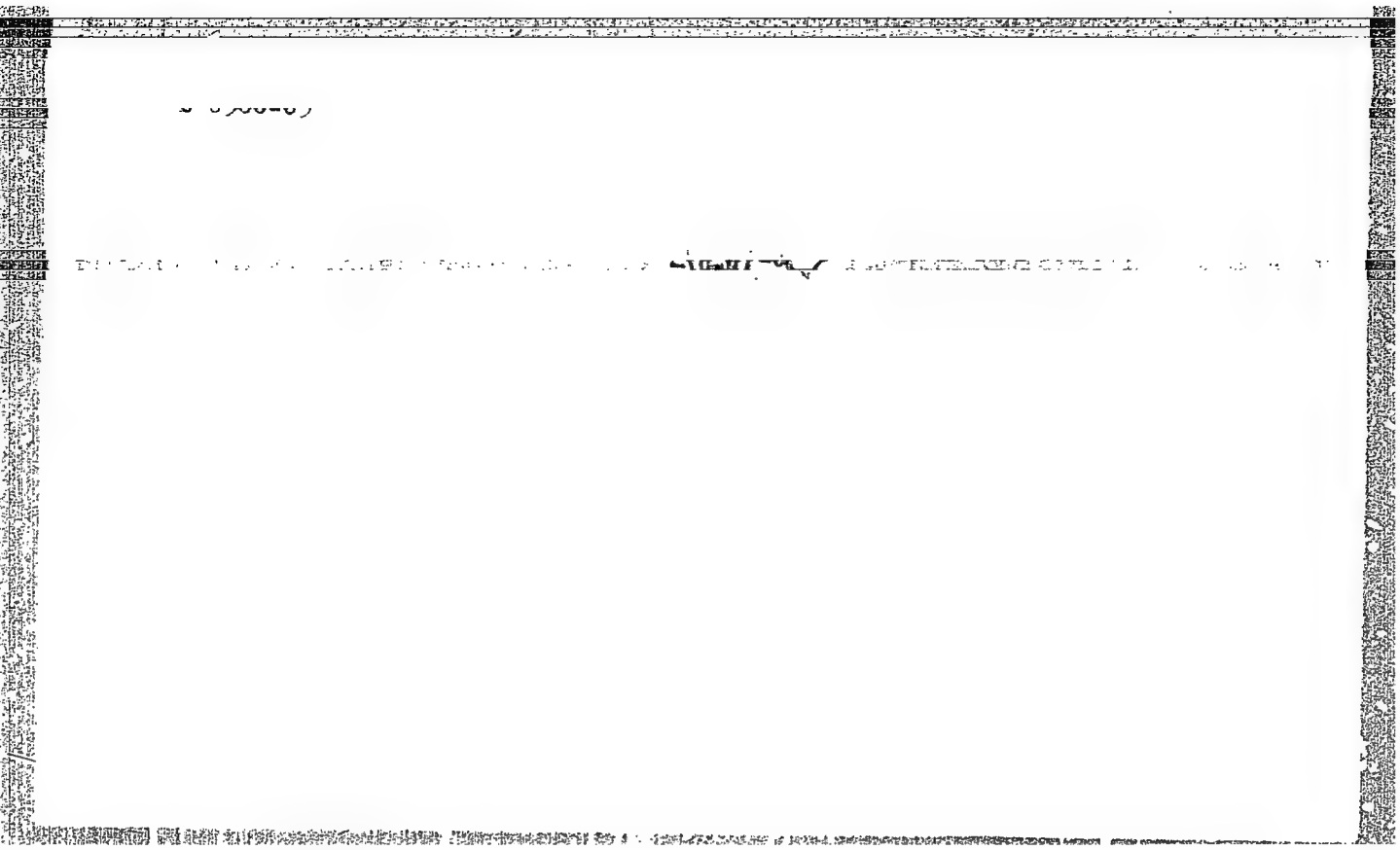
ASSOCIATION: none

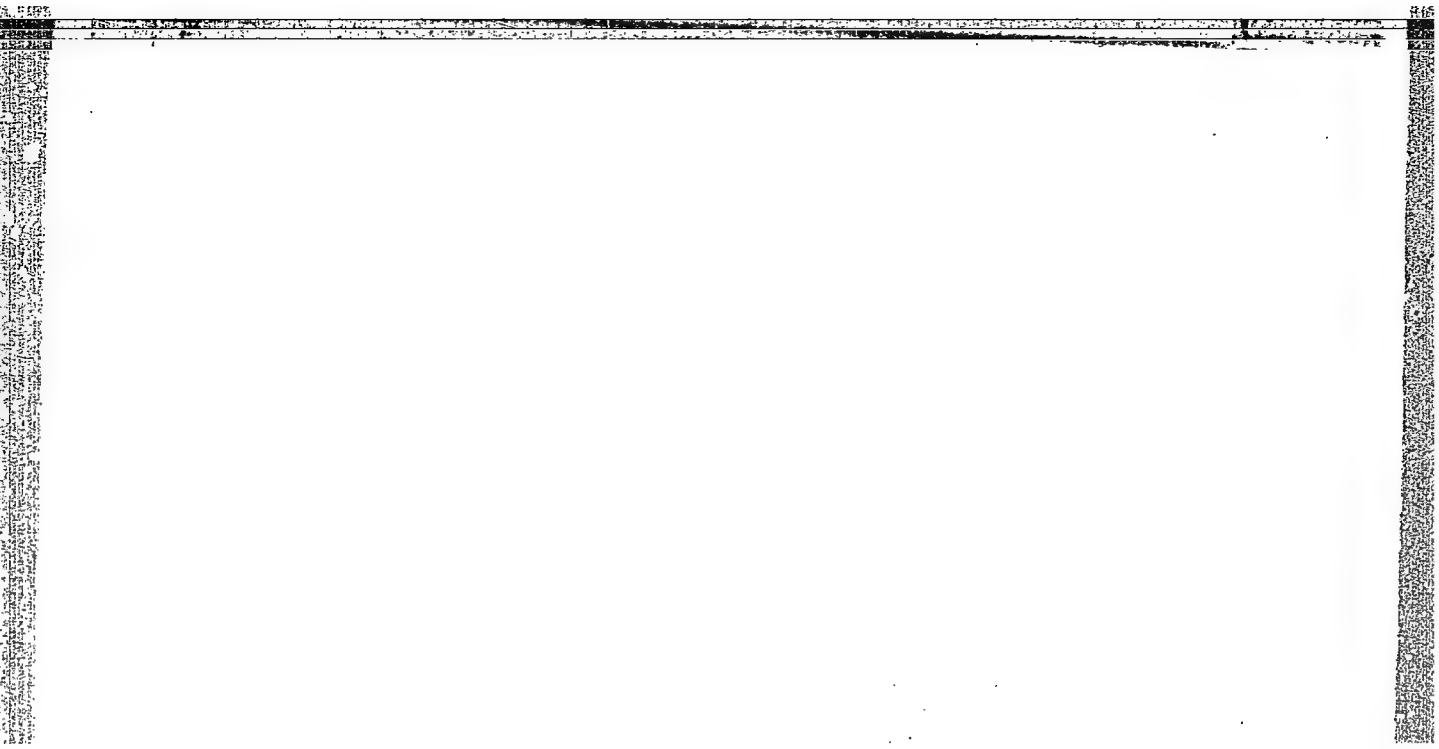
SUBMITTED: 00 DATE ACQ: 08Apr64 ENCL: 00

SUB CODE: CH NO REF SOV: 000 OTHER: 000

Card 3/3







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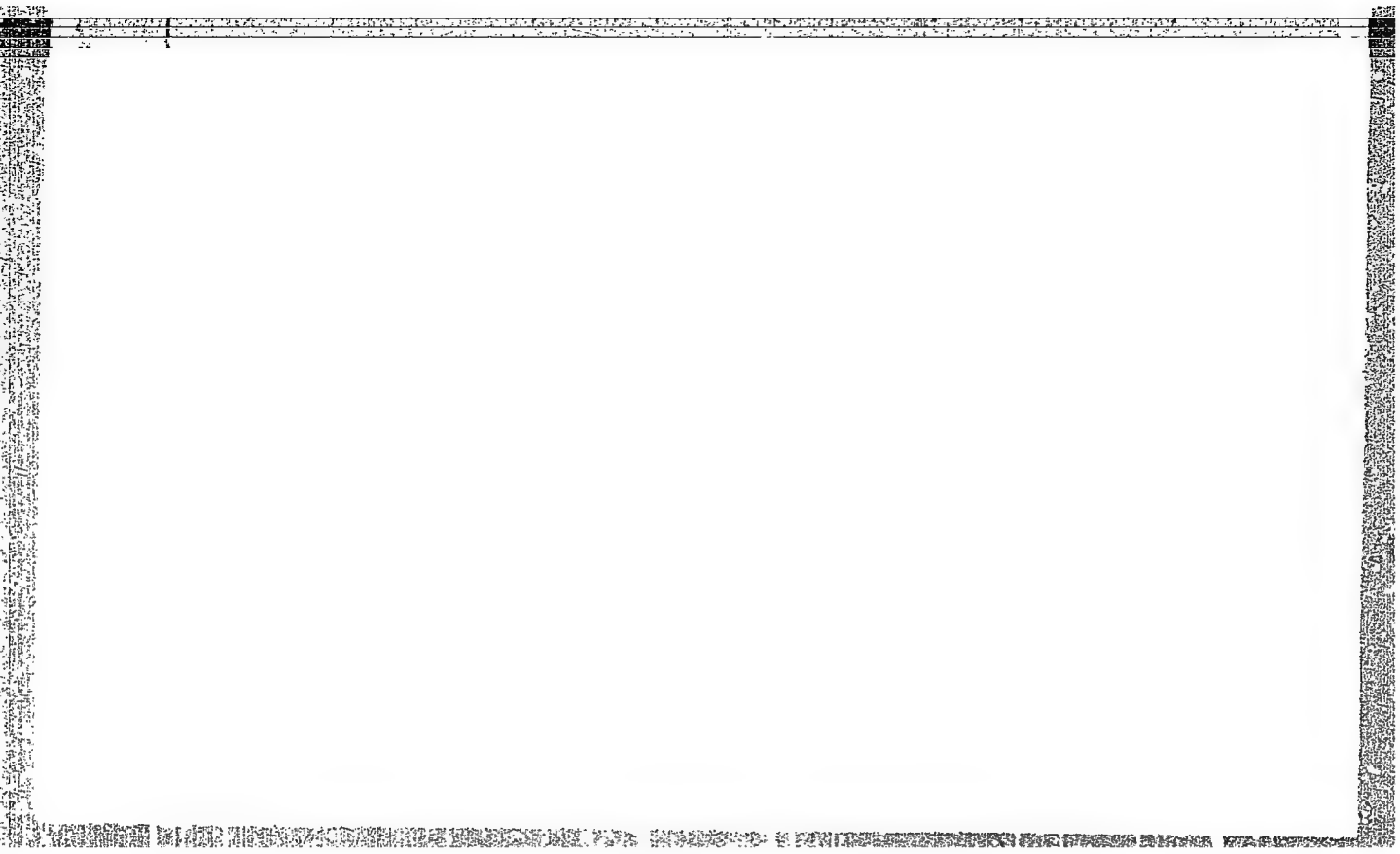
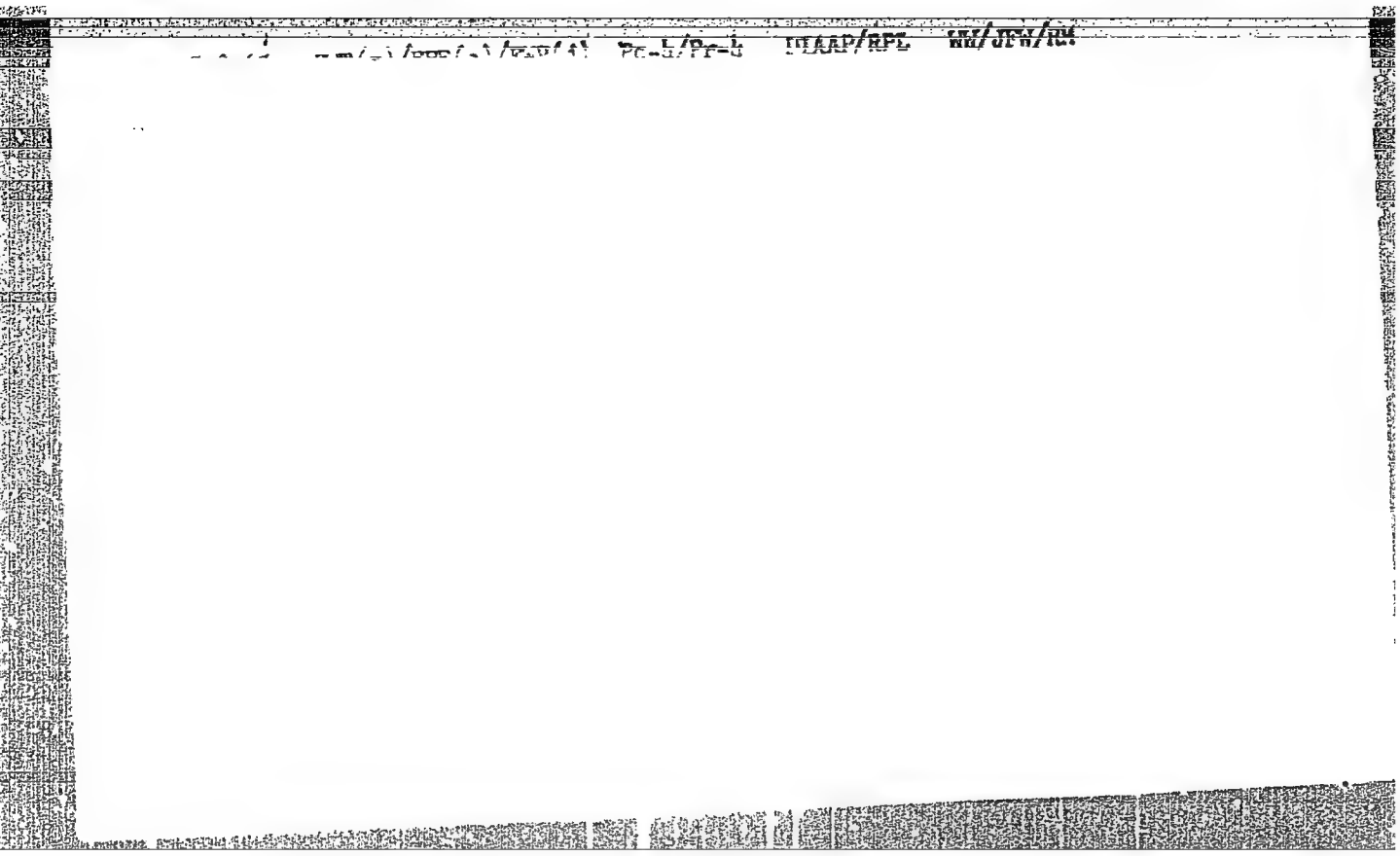


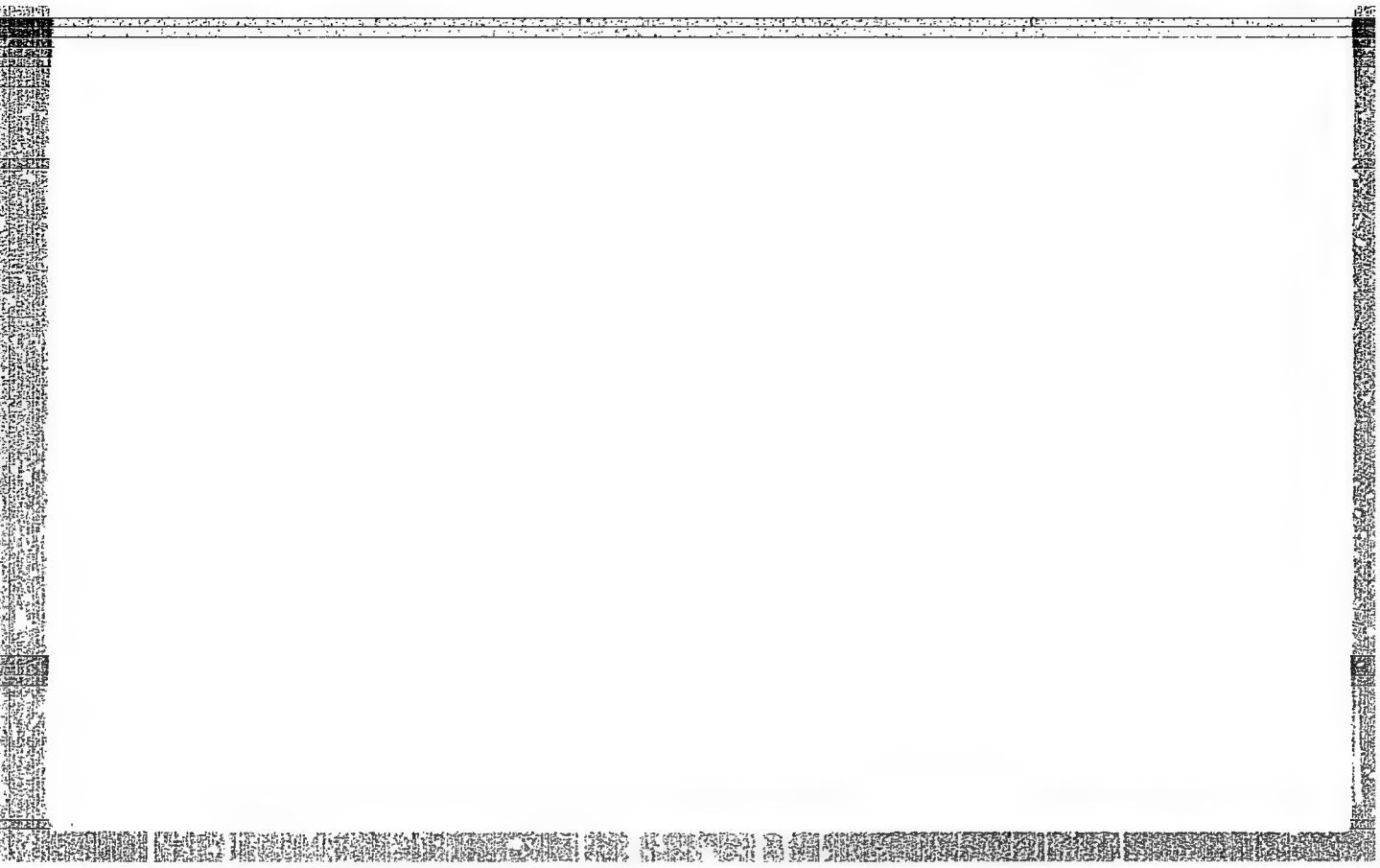
APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001861110020-1"

VOYEVODSKIY, V. V.; SOLUKHIN, R. I.

"On the mechanism and explosion limits of hydrogen and oxygen chain self-ignition in shock waves."
report submitted to 10th Intl Symp on Combustion, Cambridge, UK, 17-21 Aug 64.

Novosibirsk Univ.





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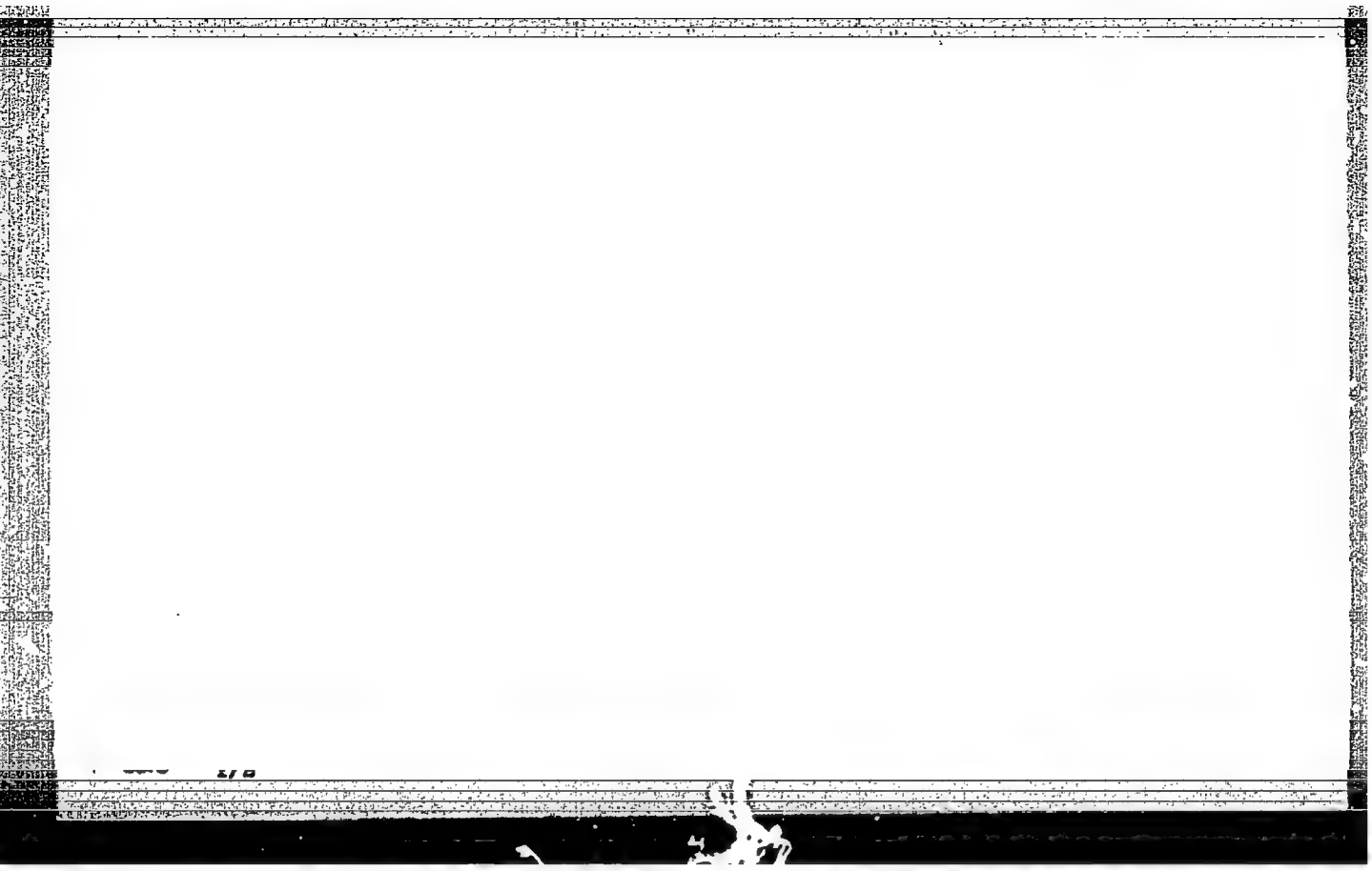

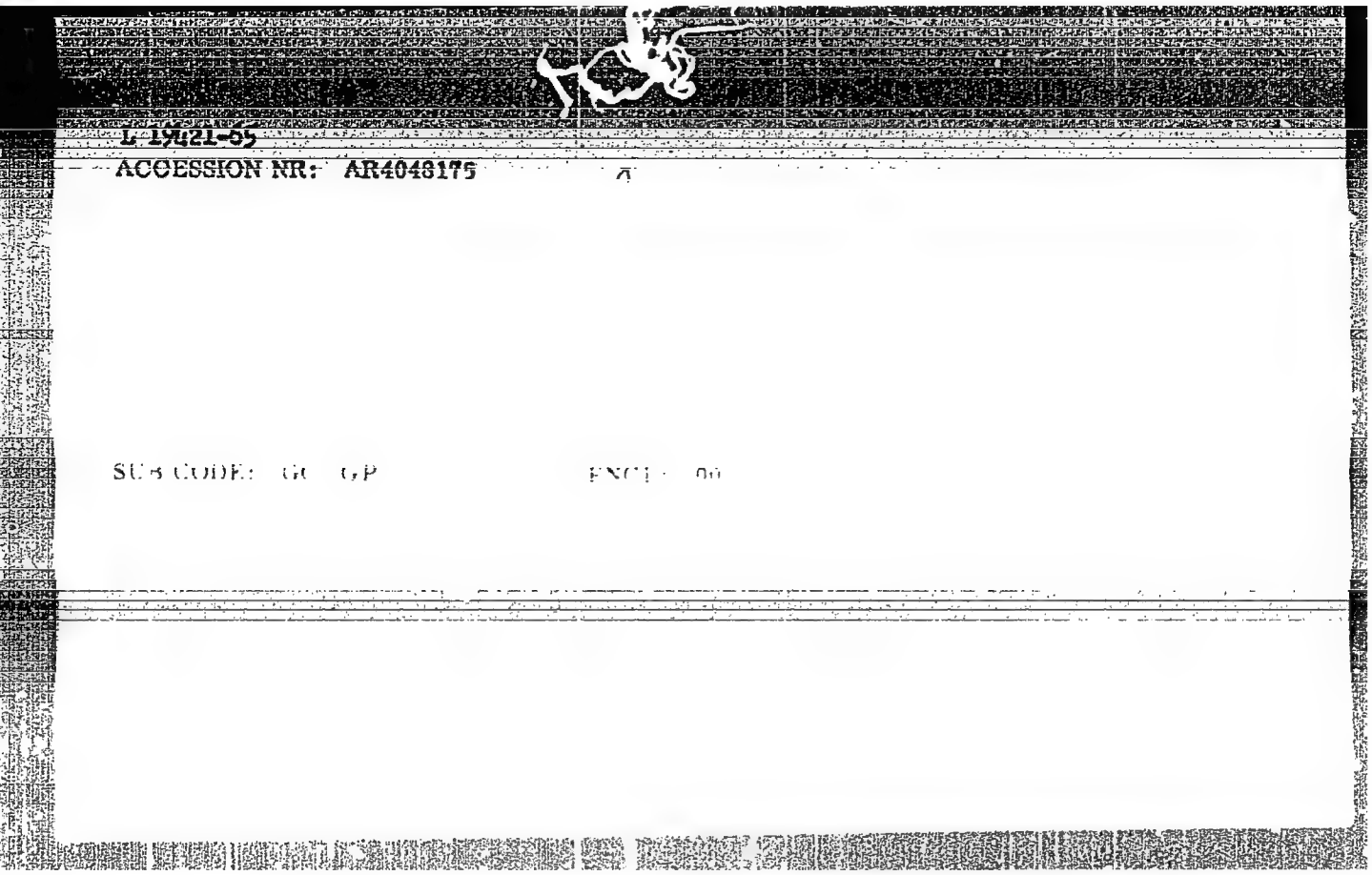

L 19421-65

ACCESSION NR: AR4048175

SUB CODE: GE GP ENCL: 00

L 10837-66 EWT(m)/EWP(j) RPL WW/GS/RM

ACC NR: AT5023445 SOURCE CODE: UR/0000/65/000/000/0249/0253

AUTHOR: Shelimov, B. N.; Fok, N. V.; Voyevodskiy, V. V.

ORG: none

TITLE: Benzene and its derivatives in photosensitized hydrocarbon decomposition at low temperatures

SOURCE: Simpozium po elementarnym protsessam khimii vysokikh energiy. Moscow, 1963. Elementarnyye protsessy khimii vysokikh energiy (Elementary processes of the chemistry of high energies); trudy simpoziuma. Moscow, 1965, 249-253

TOPIC TAGS: hydrogen, alkane, aromatic hydrocarbon, UV irradiation, EPR

ABSTRACT: Initial rates of formation of hexatriene, alkyl radical, and hydrogen were studied at 77°K as a function of C_6H_6 and C_6D_6 concentrations in 3-methylpentane. The dependence of formation rates of hexatriene and hydrogen upon temperature was studied in various solvents using a $2 \cdot 10^{-2}$ moles/l benzene concentration. All samples were UV irradiated at 77°K. Free radicals were monitored by the EPR technique. The object was to elucidate the mechanism of the simultaneous formation of alkyl radicals and hydrogen during UV irradiation of benzene solutions at 77°K. The hexatriene formation and the photosensitization were not found to be interrelated. The UV irradiation of $C_6H_5CD_3$ in 3-methylpentane at 77°K results in formation of 94% H_2 and 6%

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ACC NR: AT5023445

HD; hydrogen is the sole product when *o*-D- and *p*-D-toluene in 3-methylpentane are subjected to UV irradiation; H_2, HD, and D_2 resulted from UV irradiation of $C_6H_5CH_3$ in 3-methylpentane. A photosensitized decomposition of hydrocarbons according to the following scheme

$$C_6H_5CH_3 + RH \xrightarrow{h\nu} \text{substituted hexatriene}$$
$$C_6H_5CH_3^* + RH(RD) \rightarrow C_6H_5CH_3 + R + H(D);$$
$$H(D) + RH(RD) \rightarrow H_2(HD, D_2) + R;$$
$$H(D) + C_6H_5CH_3 \rightarrow H_2(HD) + C_6H_5CH_2.$$

occurs in the case of toluene. Results obtained with

$$C_6H_5CD_3 + RH + h\nu,$$

system revealed that the rate of formation of $C_6H_5CH_2$ radical is 10-12 times smaller than the rate of formation of alkyl radicals. It was concluded that photosensitized decomposition of hydrocarbons at 77°K also occurs in ethylbenzene, cumene, *o*-, *m*-, and *p*-xylenes, diphenyl- and triphenylmethane and other compounds. Orig. art. has: 1 formula.

SUB CODE: 07/ SUBM DATE: 23Feb65/ ORIG REF: 003/ OTH REF: 005

jw

Card 2/2

L 3064-66 EWT(m)/EPF(c)/EWF(j)/T/ETC(m) RM/DS/WW UR/0062/65/000/009/1556/1564
ACCESSION NR: AP5026807 541.634+541.67

AUTHOR: Molin, Yu. N.; Ioffe, S. T.; Zayev, Ye. Ye.; Solov'yeva, Ye. K.; Kuguchevа, Ye. Ye.; Voyevodskiy, V. V.; Kabachnik, M. I.

TITLE: Nuclear magnetic resonance study of the keto-enol equilibrium of 3-alkylacetylacetones

SOURCE: AN SSSR. Izvestiya. Seriya khimicheskaya, no. 9, 1965, 1556-1564

TOPIC TAGS: NMR spectroscopy, ketone, NMR

ABSTRACT: NMR spectra of the following compounds were studied: 3-methyl-, 3-ethyl-, 3-n-propyl-, 3-isobutyl-, 3-isopropyl-, and 3-sec-butylacetylacetone, and also 2-isopropoxy-2-penten-4-one. The spectra were taken with a JNM-3 instrument (40 Mc) and some were also recorded with an RS-2 spectrometer (60 Mc) at ~ 25C, and the content of enol forms was determined. Alkylacetylacetones with unbranched substituents were shown to contain cis-enol forms at equilibrium with the ketone; this agrees with chemical data. Compounds with branched substituents (3-isopropylacetylacetone and 3-sec-butylacety-

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L 5064-66

ACCESSION NR: AP5026507

lacetone) are almost pure ketones. The slight enolization of these substances does not permit the classification of the encl form in the cis or trans series on the basis of the NMR method alone. "Measurements with the RS-2 instrument were made at the Tsentral'myy institut khimii Vengerskoy Akademii nauk (Central Chemistry Institute of the Hungarian Academy of Sciences) with the direct participation of Dr. L. Radich, to whom the authors express their gratitude." Orig. art. has: 5 figures and 2 tables.

ASSOCIATION: Institut elementoorganicheskikh soyedineniy Akademii nauk SSSR (Institute of Organometallic Compounds, Academy of Sciences, SSSR); Institut khimicheskoy kinetiki i goreniya Sibirskogo otdeleniya Akademii nauk SSSR (Institute of Chemical Kinetics and Combustion, Siberian Branch, Academy of Sciences, SSSR)

SUBMITTED: 04Jul63 ENCL: 00 SUB CODE: OC, NP

NO REF SOV: 000 OTHER: 014

Card 2/2

TYUDESH, F.; KENDE, I.; BEREZHNYKH, T.; SOLODOVNIKOV, S.P.; VOYEVODSKIY, V.V.

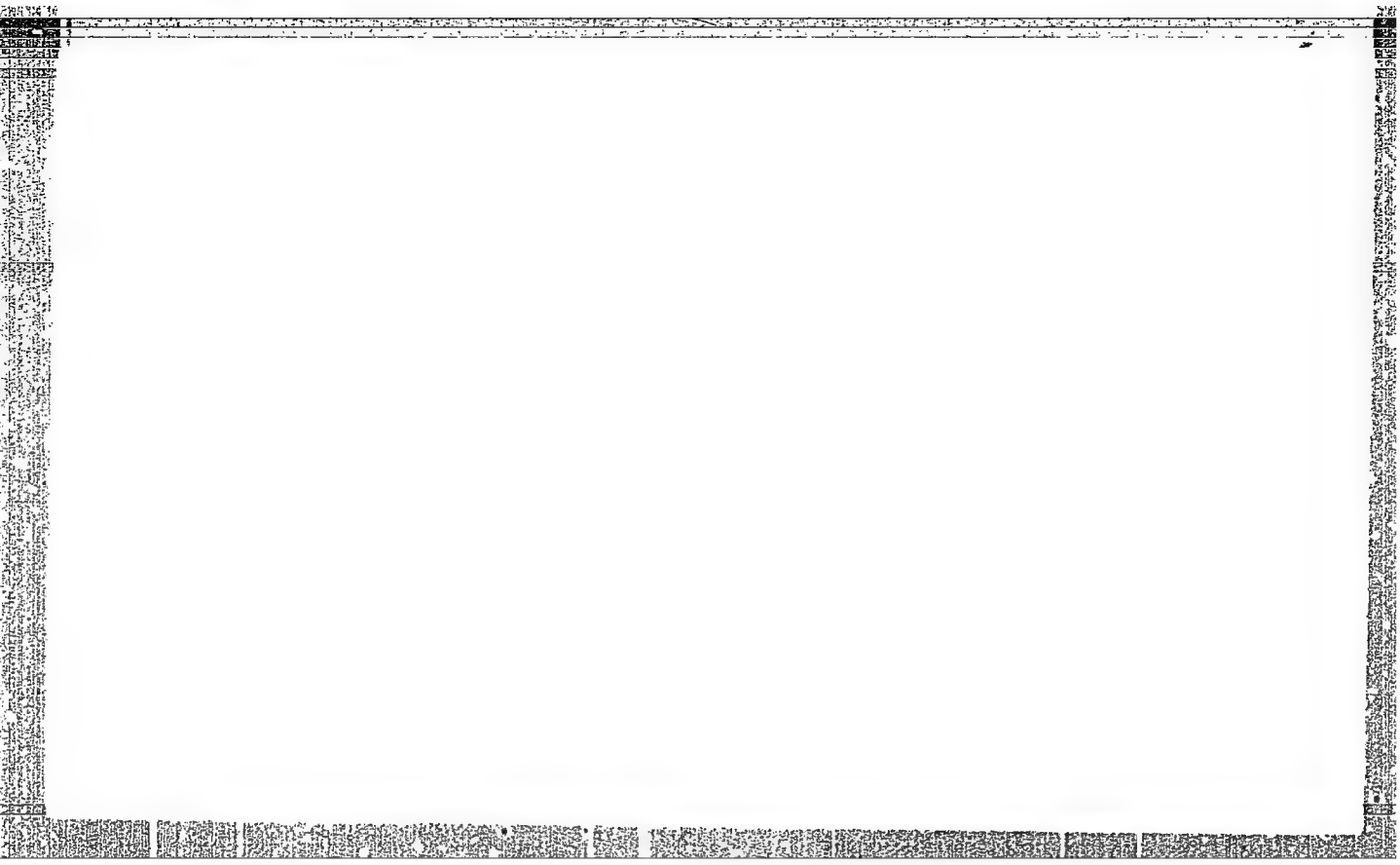
Radicals as intermediate products in the inhibition of radical polymerization reaction. Kin. i kat. 6 no.2:203-211 Mr-Ap '65. (MIRA 18:7)

1. TSentral'nyy nauchno-issledovatel'skiy institut khimii AN Vengerskoy Narodnoy Respubliki i Institut khimicheskoy fiziki AN SSSR.

SHELIMOV, B.N.; FOK, N.V.; VOYEVODSKIY, V.V.

Photolysis of ethyl alcohol solutions at 77°K. Kin.i kat. 5 no.6:1008-1013 N-D '64. (MIRA 18:3)

1. Moskovskiy gosudarstvennyy universitet imeni Lomonosova, khimicheskiy fakul'tet i Institut khimicheskoy fiziki AN SSSR.



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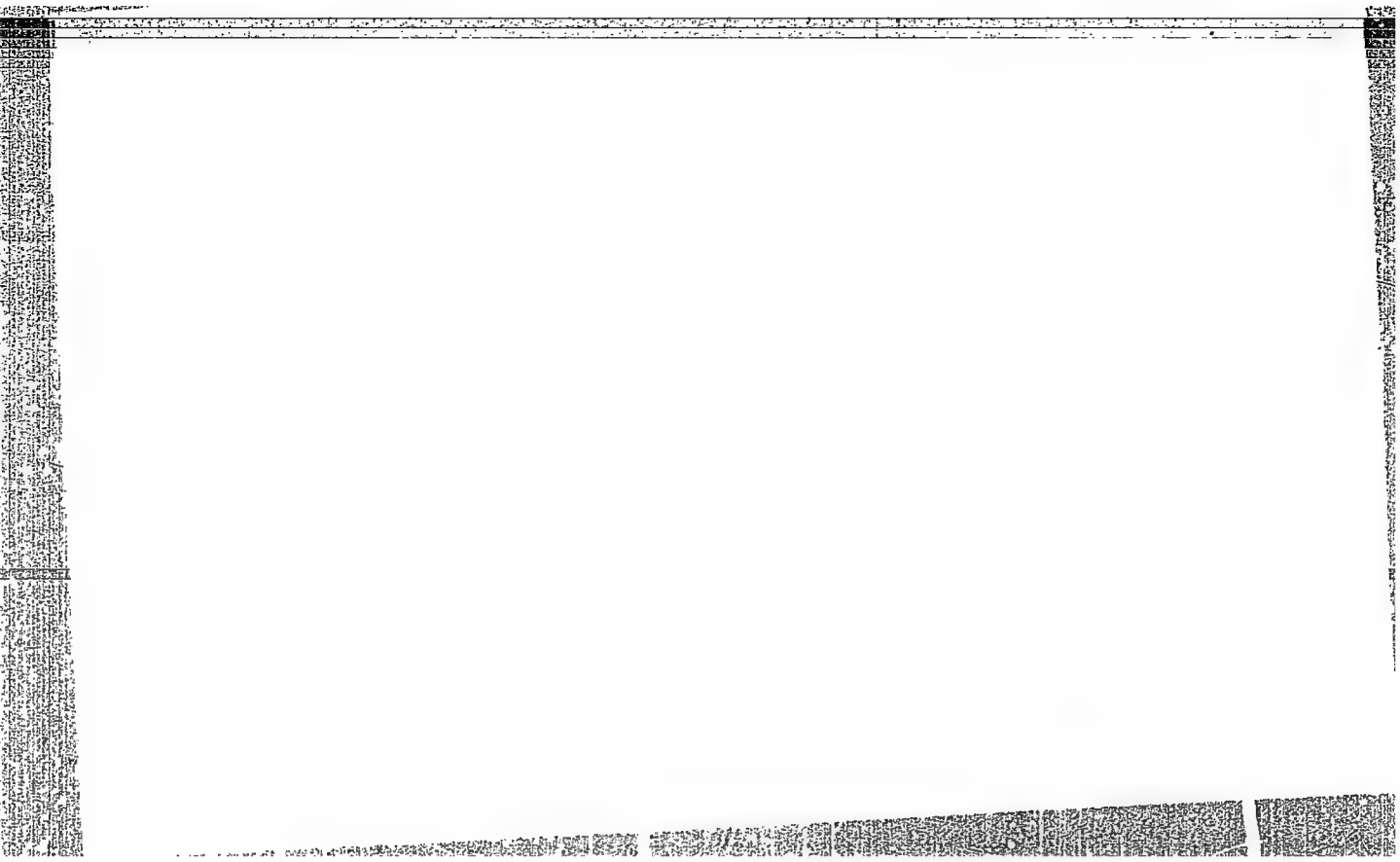

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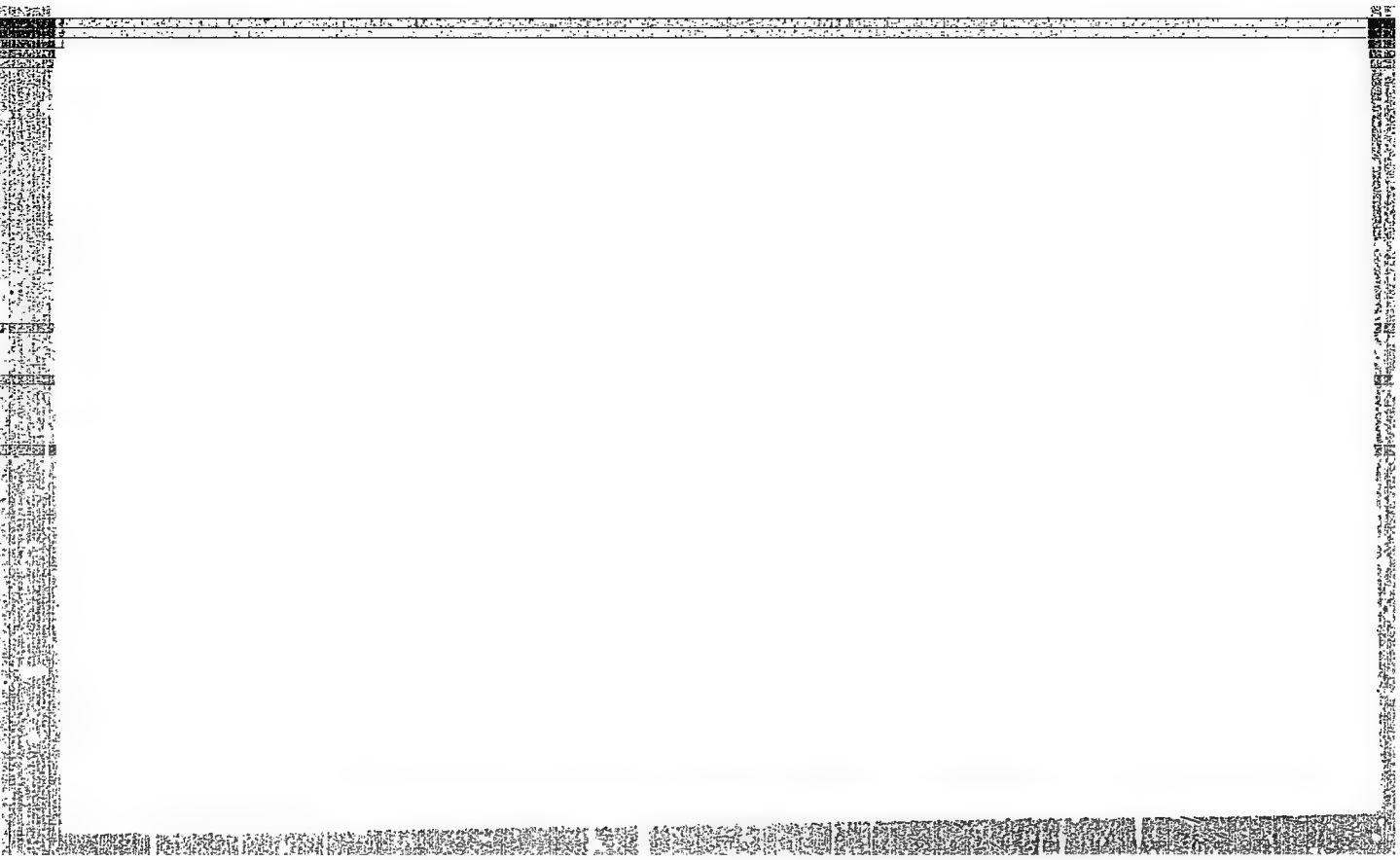

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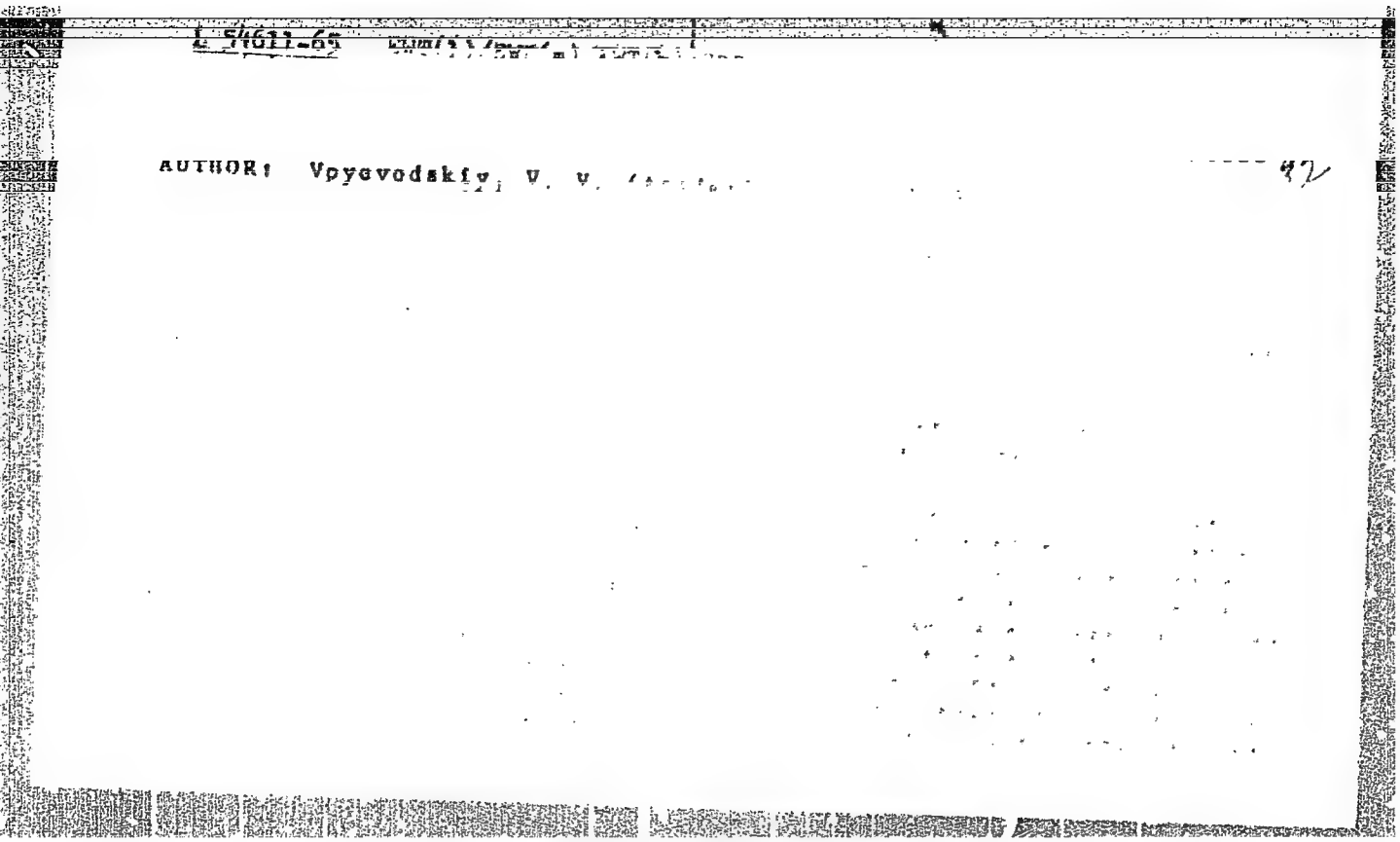
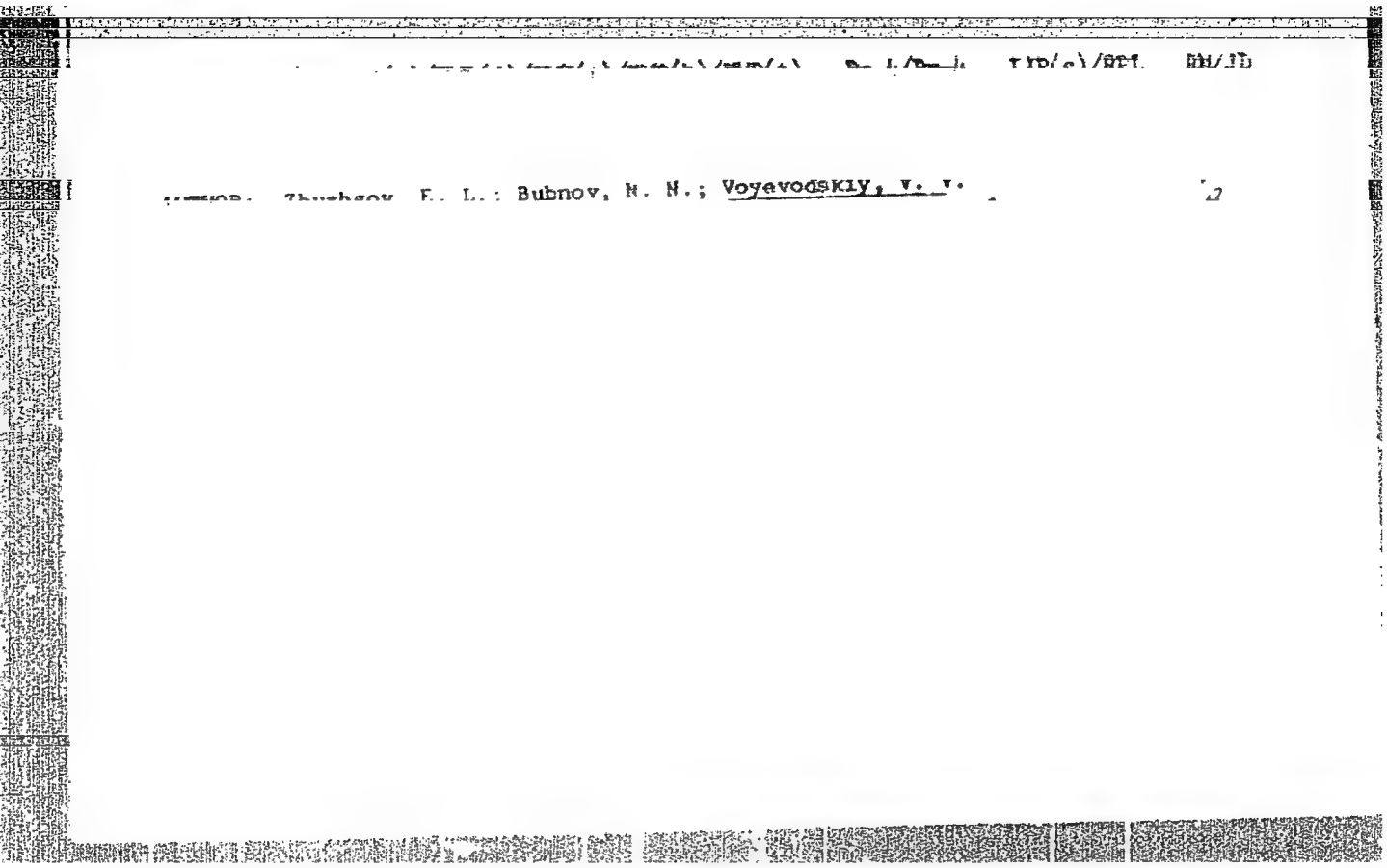


AUTHOR: Voyevodskiy, V. V.

VOYEVODSKIY, V.V., akademik

Heterolytic formation of free radicals in the radiolysis of solid organic substances. Dokl. AN SSSR 159 no.4:876-878 D '64 (MIRA 18:1)

1. Institut khimicheskoy kinetiki i goreniya Sibirskogo otdeleniya AN SSSR, Novosibirsk.



Bubnov, N. N.; Voyevodskiy, V. V.

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001861110020-1"

BUBNOV, N.N.; BAZHIN, N.M.; VOYEVODSKIY, V.V.

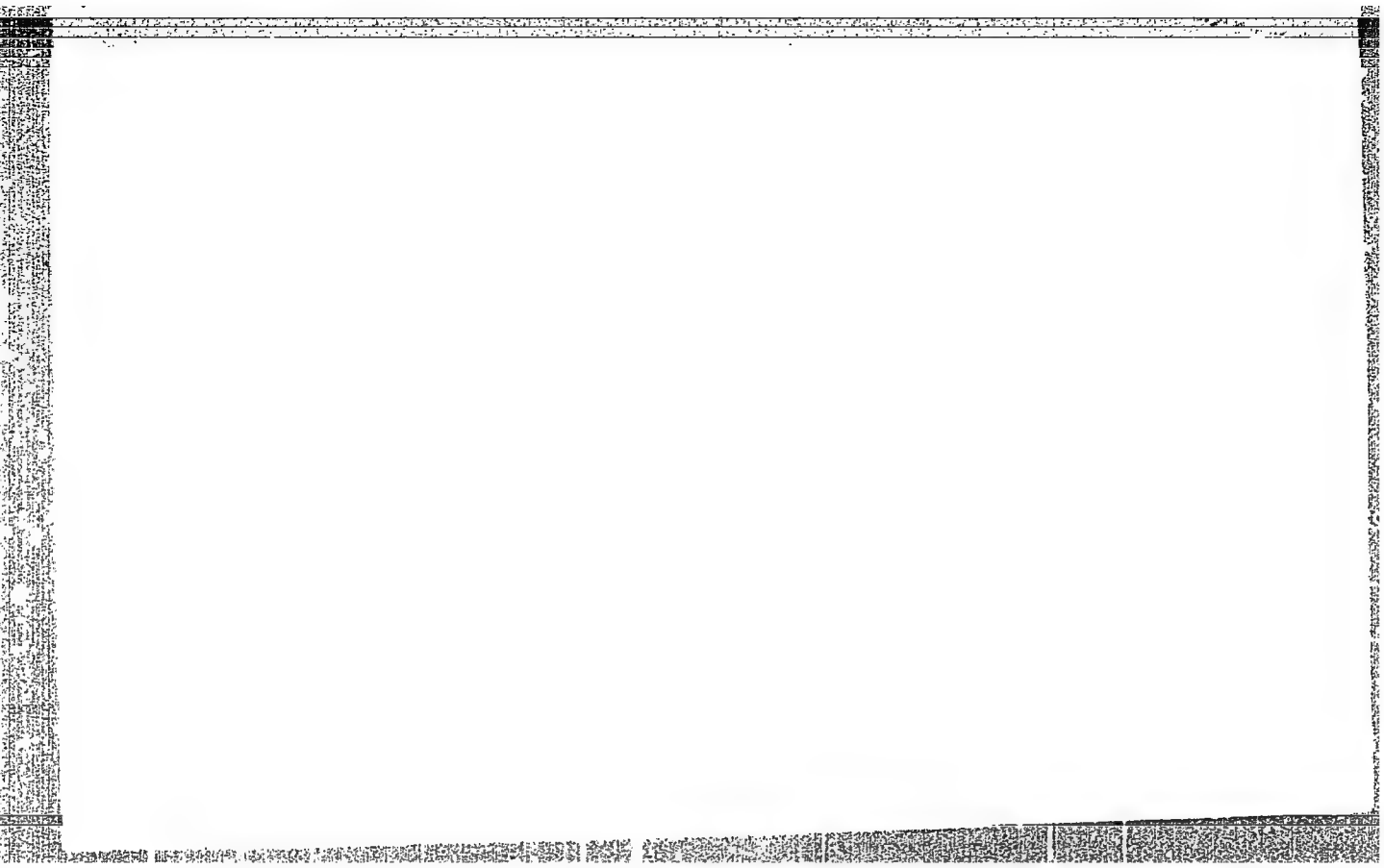
Formation of alkyl radicals in the phototransfer of electrons.
Kin. i kat. 5 no.3:568 My-Je '64. (MIRA 17:11)

1. Institut khimicheskoy kinetiki i goreniya Sibirskogo otdeleniya AN SSSR.

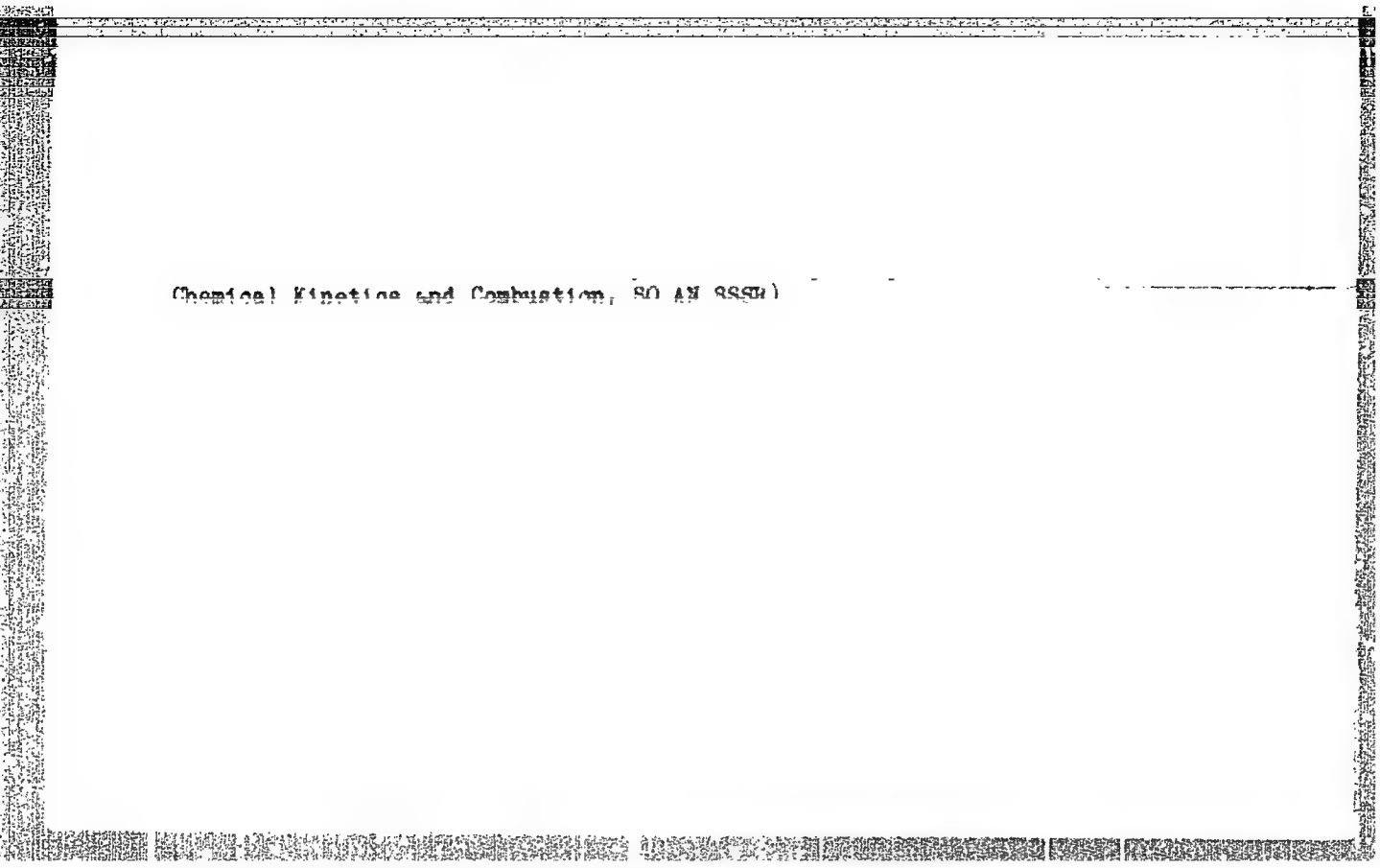
BAZHIN, N.M.; CHIBRIKIN, V.M.; VOYEVODSKIY, V.V.

Some types of polymers with conjugated bonds studied by means of electron paramagnetic resonance. Vysokom. soed. 6 no.8:1478-1482 Ag '64. (MIRA 17:10)

1. Institut khimicheskoy kinetiki i goreniya.



APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001861110020-1"



L 00927-66 EPA/EWT(m)/EPF(c)/EWG(m)/EWP(j)/T/EWP(t)/EWP(b)/EWA(c) IJP(c)/RPL
DS/JD/WW/JW/RM

ACCESSION NR: AP5020982 UR/0195/65/006/004/0577/0584
543.878:546.11-123:542.5

AUTHOR: Panfilov, V. N.; Voyevodskiy, V. V.

TITLE: The reaction of hydrogen atoms with molecules of some compounds in the zone of a rarefied hydrogen flame

SOURCE: Kinetika i kataliz, v. 6, no. 4, 1965, 577-584

TOPIC TAGS: catalytic combustion, combustion theory, combustion kinetics, combustion mechanism, hydrogen atom reaction, hydrogen fuel, free radical chain reaction, chain termination, controlled kinetics, combustion activation energy, short lived moiety, kinetic flame control

ABSTRACT: The reactions of hydrogen atoms with molecules of saturated, unsaturated and aromatic hydrocarbons as well as with molecules of monohydric alcohols were studied. Electron paramagnetic resonance measurements made it possible to observe the concentration of hydrogen atoms in rarefied hydrogen flames, and thus determine the effect of the above additives. Activation energies were calculated conventionally from plots of rate constants vs time. A convenient parameter, α, was introduced, representing the effectiveness of a given molecule in the repetitive "cycle"

Card 1/2

L 00927-66

ACCESSION NR: AP5020982 2

of reactions $H + RH \rightarrow H_2 + R$ and $R + H \rightarrow RH$. Parameter α is proportional to the ratio of rate constants of recombination and oxidation of radical R. Orig. art. has: 3 figures and 1 table. [VS]

ASSOCIATION: Institut khimicheskoy kinetiki i goreniya SO AN SSSR (Institute of Chemical Kinetics and Combustion, SO AN SSSR)

SUBMITTED: 30Mar64 ENCL: 00 SUB CODE: FP, OC

NO REF SOV: 011 OTHER: 009 ATD PRESS: 4077

Card 2/2 VP

ACC NR: AN7005951 SOURCE CODE: UR/9012/67/000/052/0004/0004

AUTHOR: none

ORG: none

TITLE: Death of Academician V. V. Voyevodskiy

SOURCE: Pravda, no. 52, 21 Feb 67, p. 4, col. 8

TOPIC TAGS: scientific personnel, chemical personnel

ABSTRACT: Academician V. V. Voyevodskiy died at 50. He was a well-known specialist in chemical physics. [NC]

SUB CODE: 05/ 07/ SUBM DATE: none/ ATD PRESS: 5115

Card 1/1 UDC: none

BAZHIN, N.M.; LIKHACHEVA, N.M.; BUBNOV, N.N.; VOYEVODSKIY, V.V.

Reactions involving a hydrogen atom in the system $H_2O + H_2SO_4 + FeSO_4$. Reaction with Fe^{+2}. Kin. i kat. 6 no. 6:1105-1108 N-D '65 (MIRA 19:1)

1. Institut khimicheskoy kinetiki i goreniya Sibirskogo otdeleniya AN SSSR. Submitted September 14, 1964.

L 17989-66 EWT(m)/EWP(j)/T/ETC(m)-6 WW/JW/WE/RM

ACC NR: AP6007776 SOURCE CODE: UR/0195/66/007/001/0161/0165

51
50B

AUTHOR: Bazhin, N. M.; Kuznetsov, E. V.; Bubnov, N. N.; Voyevodskiy, V. V.

ORG: Institute of Chemical Kinetics and Combustion, SO AN SSSR (Institut khimicheskoy kinetiki i goreniya SO AN SSSR)

TITLE: Reactions of hydrogen atoms in the system water-sulfuric acid-ferrous sulfate. II. Reactions with unsaturated compounds

SOURCE: Kinetika i kataliz, v. 7, no. 1, 1966, 161-165

TOPIC TAGS: hydrogen, free radical, free radical reaction, unsaturated hydrocarbon

ABSTRACT: Previous work has shown that UV irradiation of $FeSO_4$ solutions in dilute sulfuric acid at 77K leads to the formation of hydrogen atoms, which are stable at this temperature. In this work, the reactions of such hydrogen atoms at 90K and 120K with acetylene, ethylene, propylene, allyl alcohol and carbon monoxide were studied. The concentrations of hydrogen atoms and of the reaction products were measured by observing the EPR spectra of the samples. Except for acetylene, all EPR measurements were made at 77K. Hydrogen atoms add to acetylene to form vinyl radicals whose hyperfine structure is similar to that obtained by other workers in the photolysis of HI in the presence of acetylene at liquid helium temperatures. In discussing the mode of addition, the authors compare their observations with other work on the addition of hydrogen atoms to deuterated acetylene. Addition of hydrogen atoms to

UDC: 541.141:546.722'226—145.2

Card 1/2

L 17989-66

ACC NR: AP6007776

propylene leads almost exclusively to the formation of isopropyl radicals. It was observed that ethyl and isopropyl radicals do not decompose under the influence of UV or visible light under experimental conditions. The spectrum of the reaction product obtained from allyl alcohol is very similar to those of hydrocarbon radicals $RCH_2\dot{C}H_2$ and therefore can be ascribed to the radical $\dot{C}H_2CH_2CH_2OH$. Since a protonated form of allyl alcohol is involved, the radical in this case must be $\dot{C}H_2CH_2CH_2OH_2^+$. The energy decrease due to the increased separation of the unpaired electron and the charge on the hydroxyl group must be sufficient to offset the energy increase of localization of the unpaired electron on a primary rather than on a secondary carbon atom. Addition of a hydrogen atom to CO yields a product whose spectrum consists of a doublet with a separation of approximately 132 e, and can be ascribed to the radical $H\dot{C}O$. The radical decomposes under the influence of light, probably to H and CO. The authors conclude that under the above conditions hydrogen atoms can react with unsaturated compounds by adding to double or triple bonds, or to unshared electron pairs. Useful quantitative data concerning unsaturated compounds can be obtained in this manner. Orig. art. has: 2 figures. [VS]

SUB CODE: 07 SUBM DATE: 14Jun65/ ORIG REF: 005/ OTH REF: 006/ ATD PRESS: 4212

Card 2/2

L 26359-66 EWT(m)/EPF(n)-2/EWP(j)/EWA(h)/EWA(1) WW/JW/GG/RM

ACC NR: AP6013381 SOURCE CODE: UR/0195/66/007/002/0230/0236

AUTHOR: Chkheidze, I. I.; Nolin, Yu. N.; Mironov, V. F.; Chernyshev, Ye. A.; Buben, N. Ya.; Voyevodskiy, V. V.

ORG: Institute of Chemical Physics AN SSSR (Institut khimicheskoy fiziki AN SSSR); Institute of Kinetics and Combustion, SO AN SSSR (Institut kinetiki i goreniya SO AN SSSR); Institute of Organic Chemistry im. N. D. Zelinskiy, AN SSSR (Institut organicheskoy khimii AN SSSR)

TITLE: Formation of radicals during the radiolysis of organic solids. Part 3: EPR spectra and radiation yields of radicals in certain organosilicon compounds

SOURCE: Kinetika i kataliz, v. 7, no. 2, 1966, 230-236

TOPIC TAGS: free radical, organosilicon compound, irradiation effect, EPR spectrum

ABSTRACT: The EPR method was used to investigate the radical processes involved in the low-temperature radiolysis of certain organosilicon compounds with a view to determining the effect of the silicon atom entering into the aliphatic chain on the effectiveness and direction of primary radiochemical processes. The radiation yields of the radicals (G_R) formed by irradiating the compounds with fast electrons at temperatures from -130 to -180°C were determined by the EPR method. It was found that G_R for saturated and aromatic substituted derivatives of tetramethylsilane did not

UDC: 541.15-16

Card 1/2

L 26359-66
ACC NR: AP6013381

differ from G_R for hydrocarbons of similar structure and amounted to 4-5 1/100 ev and 0.2-0.6 1/100 ev, respectively. For compounds of the general formula $(CH_3)_3Si(CH_2)_n$ $CH=CH_2$ (n = 0, 1, 2), the radiation yield is G_R = 1 1/100 ev, which is approximately 4 times less than for hydrocarbons with double bond. Analysis of the EPR spectra showed that the introduction of a silicon atom in the aliphatic chain does not produce any appreciable changes in the radiolysis mechanism. Orig. art. has: 7 figures, 2 tables, 5 formulas.

SUB CODE: 07, 20/ SUBM DATE: 12Sep64/ ORIG REF: 008/ OTH REF: 005

Card 2/2

L 45776-66 EWP(j)/EWT(m) RM/JW

ACC NR: AP6030704 SOURCE CODE: UR/0195/66/007/004/0732/0734

39
38
B

AUTHOR: Bazhin, N. M.; Kuznetsov, E. V.; Bubnov, N. N.; Voyevodskiy, V. V.

ORG: Institute of Chemical Kinetics and Combustion, SO AN SSSR (Institut khimicheskoy kinetiki i goreniya SO AN SSSR)

TITLE: Reaction of the hydrogen atom in the system $H_2O+H_2SO_4+FeSO_4$. III. Reaction with saturated organic compounds

SOURCE: Kinetika i kataliz, v. 7, no. 4, 1966, 732-734

TOPIC TAGS: hydrogen atom reaction, methanol, ethanol, isopropyl alcohol, ethylene glycol, isobutyric acid, malonic acid, acetone, free radical

ABSTRACT: Atomic hydrogen obtained by the action of UV light on frozen $H_2O+H_2SO_4+FeSO_4$ at 77K was previously shown to react with unsaturated organic compounds. In the present paper, the authors studied the reaction with a series of saturated compounds having weak C-H bonds (methanol, ethanol, isopropyl alcohol, ethylene glycol, isobutyric acid, malonic acid, and acetone). The reactions were carried out with 0.1 M solutions of the organic reagents at 90 and 120K, and the products were identified from the EPR spectra. It was found that the reaction between H and methanol, ethanol, isopropyl alcohol, malonic acid, and isobutyric

Card 1/2 UDC: 543.878:546.11—123—145

acid resulted in the following radicals: $\dot{C}H_2OH$, $CH_3\dot{C}HOH$, $H_3C-\overset{\dot{}}{\underset{OH}{C}}-CH_3$, $HOOC-\overset{\dot{}}{\underset{H}{C}}-COOH$ and $H_3C-\overset{\dot{}}{\underset{COOH}{C}}-CH_3$, respectively. In the case of methanol, the $\dot{C}H_2OH$ was further broken down to $H\dot{C}O$, but no $\dot{C}H_3$ could be detected. With acetone, the reaction yielded $CH_2-\overset{\dot{}}{\underset{OH}{C}}-CH_3$ instead of $H_3C-\overset{\dot{}}{\underset{OH}{C}}-CH_3$, while in the case of ethylene glycol, only $\dot{C}H_2-\overset{\dot{}}{\underset{O}{C}}-H$ and no $\dot{C}H_2OH$ could be detected. The mechanism by which atomic H at approximately 90K can capture hydrogen from alcohols, organic acids, and ketones is discussed. Orig. art. has: 5 formulas and 1 figure. [26]

SUB CODE: 07/ SUBM DATE: 08Oct65/ ORG REF: 004/ ATD PRESS: 5084

TOVBIN, M.V.; VOYEVUDSKAYA, Z.L.

Autoadsorption process. Part 1. Surface tension of salt solutions. Ukr.khim.zhur. 22 no.2:173-179 '56. (MLRA 9:8)

1. Kiyevskiy gosudarstvennyy universitet imeni T.G. Shevchenko.
(Surface tension) (Salts)

VOYEVUDSKAYA, Z. L.

USSR/ Physical Chemistry - Surface phenomena. Adsorption. Chromatography. Ion exchange B-13

Abs Jour : Referat Zhur - Khimiya, No 4, 1957, 11387

Author : Tovbin M.B., Voyevudskaya Z.L.
Title : Concerning the Process of Self-Adsorption. 1. Surface Tension of Salt Solutions

Orig Pub : Ukr. khim. zh., 1956, 22, No 2, 173-179

Abstract : The assumption is made of the existence of a phenomenon of self-adsorption which consists in an accumulation of molecules of an individual substance or solvent at the surface of liquid phase-air interface. On the basis of this assumption and thermodynamic considerations a correlation has been established between surface tension (σ) and vapor tension (P) of solutions of non-volatile surface-active substances. In particular, as a result of dissolution of electrolytes in water self-adsorption of water vapor at the surface of the solution causes a decrease of p over the solution and an increase of σ of the solution, as compared with p and σ of pure water. At temperatures of 25, 35 and 45° measurements were made of σ of aqueous solutions of NaCl, KCl, $MgCl_2$, $BaCl_2$, KI, Na_2SO_4 and it was shown that in the

1/2

USSR/ Physical Chemistry - Surface phenomena. Adsorption. Chromatography. Ion exchange B-13

Abs Jour : Referat Zhur - Khimiya, No 4, 1957, 11387

case of pure water and of all the solutions of the above-stated salts, regardless of the nature of dissolved surface-active substances, σ depends in an uniquely defined manner on p. This correlation is linear and on its basis was calculated the value of self-adsorption of water, which is (in 10^{-10} mole/cm^2): 14.58 at 25°, 16.32 at 35°, 19.26 at 45°. On dissolution of surface-active substances the effect of self-adsorption is suppressed by adsorption of the solute, resulting in decrease of σ .

2/2

KARACHAN, B.P.; VOYEVUDSKIY, B.M.

Valves of a new type for large diameter sewers. Vod. i san. tekhn. no.10:35-36 O '58. (MIRA 11:10)
(Sewers, Concrete) (Valves)

KARACHAN, B.P.; VOYEVUDSKIY, B.M.

Chemically stable plastic materials. Stroi. prom. 36 no. 7:42-43 Jl '58. (MIRA 11:8)

(Plastics)

KARLSEN, G.G., kand.biolog.nauk; VOYEYKOV, A.B., mladshiy nauchnyy sotrudnik

Working out a method for investigating the working qualities of horses. (MIRA 16;3)
Trudy VNIIK no.17:65-82 '49.
(Draft horses)

VOYEYKOV, A.B., mladshiy nauchnyy sotrudnik

Improving horse harnesses. Trudy VNIIK no.17:83-89 '49. (MIRA 16:3)
(Harness)

KARLSEN, G.G., kand.biolog.nauk; VOYEYKOV, A.B., nauchnyy sotrudnik; KOBRIN, B., red.; TIKHONOV, N., tekhn.red.

[Using horses in agriculture] Ispol'zovanie loshadei v sel'skom khoziaistve. Moskva, Mosk.rabochii, 1947. 118 p. (MIRA 13:9)

1. Zaveduyushchiy otdelom konoispol'zovaniya Vsesoyuznogo nauchno-issledovatel'skogo instituta konevodstva (for Karlsen). 2. Vsesoyuznyy nauchno-issledovatel'skiy institut konevodstva (for (Voyeykov).

(Draft horses)

VOYEYKOV, A. B.

24168 VOYEYKOV, A. B. Usovershenstvovaniye konskoy uprchzhi. Trudy Vsesoyuz. Nauch.-issled. In-TA konevodstva, VYP. 17, 1949, S. 83-89.

SO: Letopis, No. 32, 1949.

VOYEYKOV, A.P.

Automation and mechanization of the processes of the chemical heat treatment of steel parts. Avt. prom. 29 no.8: 34-36 Ag '63. (MIRA 16:11)

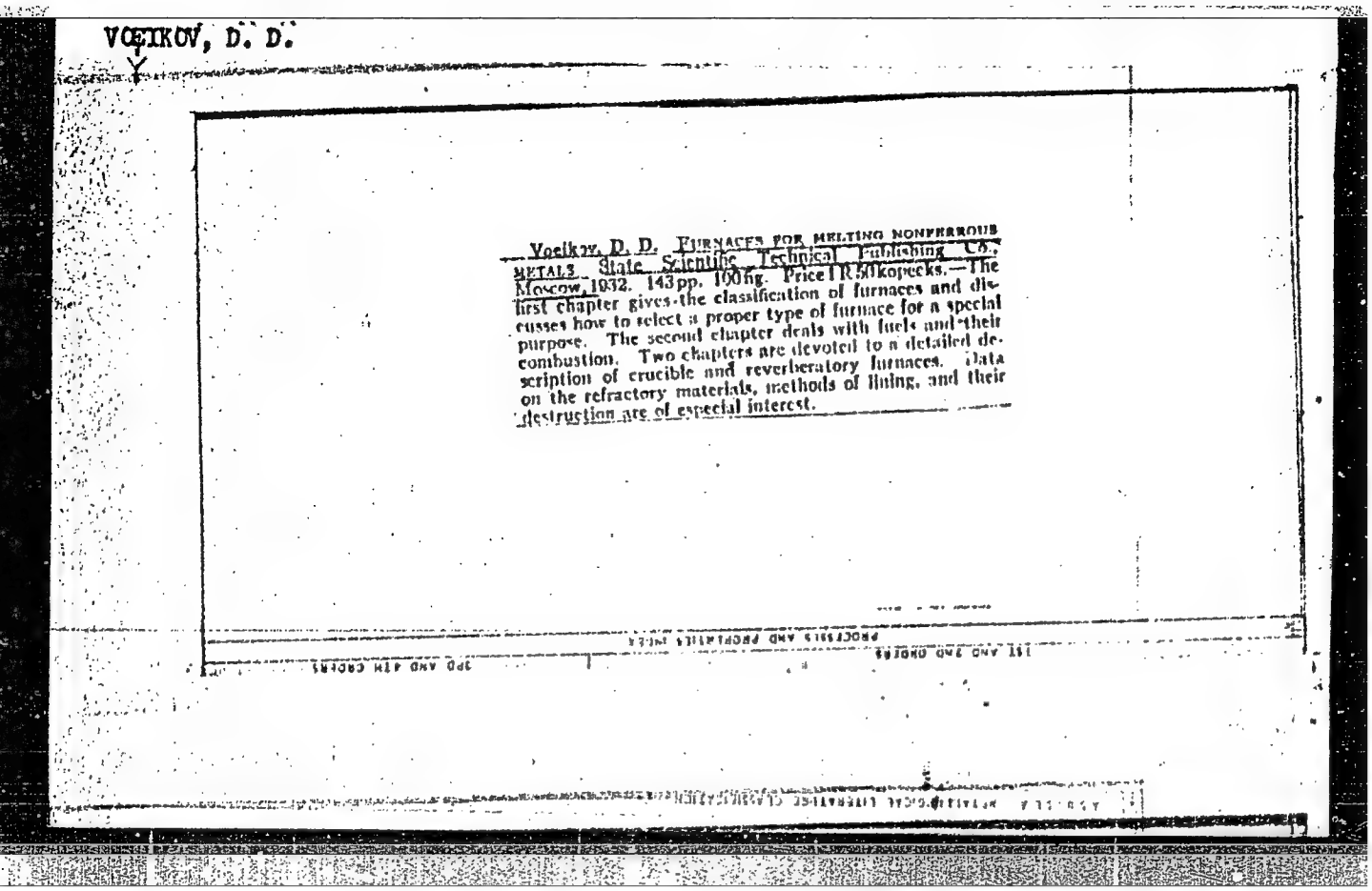
1. Moskovskiy avtozavod imeni Likhacheva.

VOYEYKOV, A. V.

24180 VOYEYKOV, A. V. K razrabotke metodov ispytanny rabochikh kachestv loshadey. Trudy Vsesoyuz. nauch.-issed. in-ta konevodstva, VYP. 17, 1949, S. 65-82.

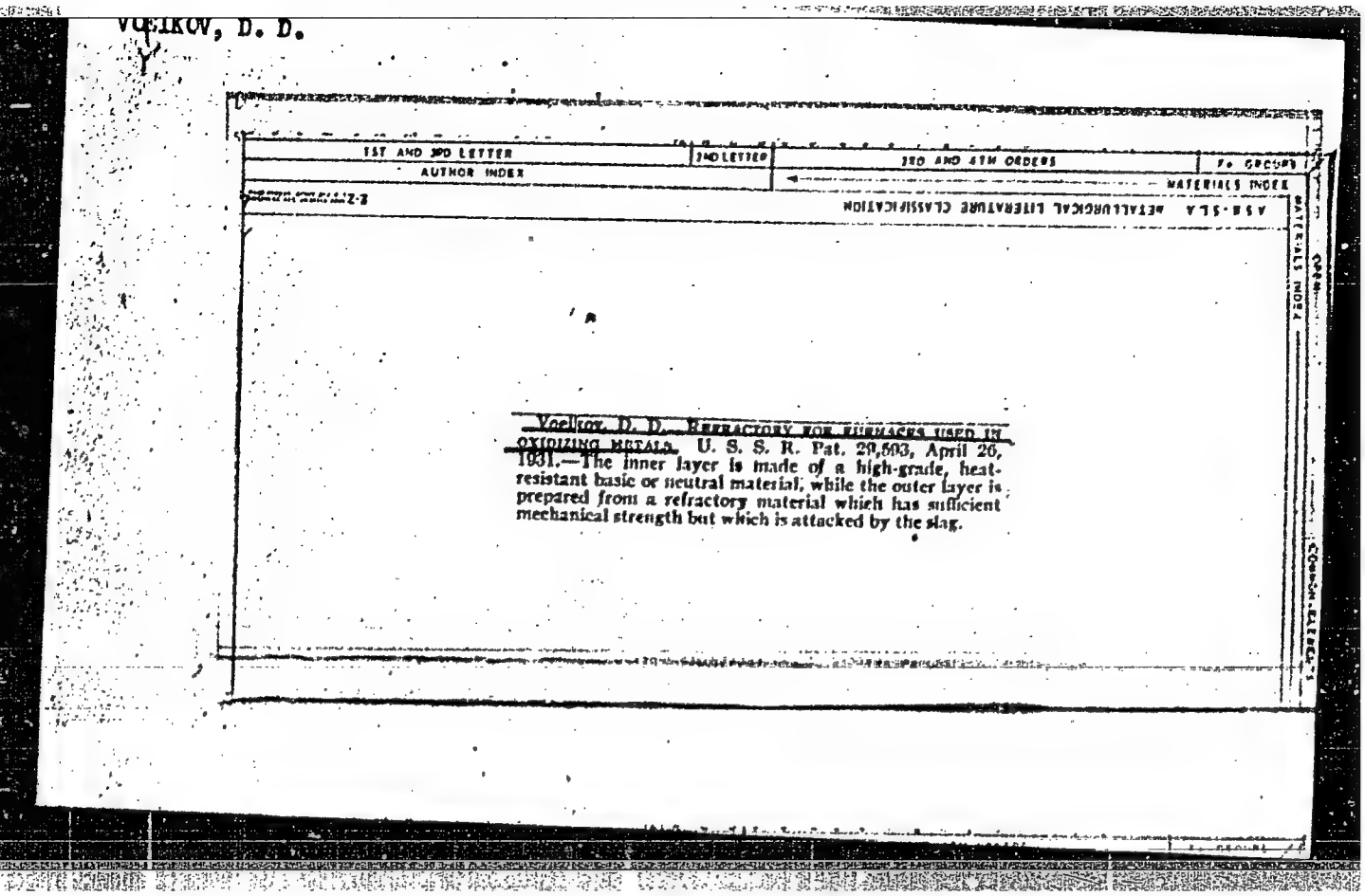
SO: Letopis, No. 32, 1949.

VOEIKOV, D. D.



Voeikov, D. D. FURNACES FOR MELTING NONFERROUS METALS. State Scientific Technical Publishing Co., Moscow, 1932. 143 pp. 100 fig. Price 1 R 50 kopecks.—The first chapter gives the classification of furnaces and discusses how to select a proper type of furnace for a special purpose. The second chapter deals with fuels and their combustion. Two chapters are devoted to a detailed description of crucible and reverberatory furnaces. Data on the refractory materials, methods of lining, and their destruction are of especial interest.

VOEIKOV, D. D.



1ST AND 3RD LETTER | 2ND LETTER | 3RD AND 4TH ORDERS | 5th GROUP
AUTHOR INDEX
MATERIALS INDEX

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

Voeikov, D. D. REFRACTORY FOR FURNACES USED IN OXIDIZING METALS. U. S. S. R. Pat. 29,503, April 26, 1931.—The inner layer is made of a high-grade, heat-resistant basic or neutral material, while the outer layer is prepared from a refractory material which has sufficient mechanical strength but which is attacked by the slag.

VOYEYKOV, D.D.

Calculating errors of attenuators. Elektrosviaz' 11 no.2:28-32 F '57. (MLRA 10:3)

(Electric resistors)

SOV/120-59-4-23/50

AUTHOR: Voyevykov, D. D.

TITLE: A Balanced Hall-Effect Magnetometer with a Thermostatted Detector

PERIODICAL: Pribory i tekhnika eksperimenta, 1959, Nr 4, pp 100-102 (USSR)

ABSTRACT: The unit is meant for use in fields of strength 100-16 000 oersted. The first part of the paper presents the theory. The detector is a piece of n-type germanium 2.7 x 2.7 x 0.4 mm of specific resistance 2-3 ohm-cm. Fig 2 shows the bridge system used to measure the Hall e.m.f. (here 10 μV/oersted at a working current of 10 mA at 1000 c/s). Fig 4 shows the thermostat system (the bottom pair of wires go to the detector, while the top pair go to a thermistor). Fig 5 shows a general view of the complete unit. The detector is designed to work at +55°C; the excursions do not exceed 1.5°C at the thermistor, which is near the heater, and are only about 0.25°C at the detector, which is thermally insulated. The heater power can be adjusted in nine

Card 1/2

SOV/120-59-4-23/50

A Balanced Hall-Effect Magnetometer with a Thermostatted Detector

steps to suit atmospheric temperatures from -30 to +50°C. The paper contains 5 figures and 6 references, 2 of which are Soviet and 4 English.

SUBMITTED: May 14, 1958.

Card 2/2

31828
S/194/61/000/010/036/082
D256/D301

9.4370 (1043,1137)

AUTHOR: Voyeykov, D.D.

TITLE: Some problems of Hall emf-element construction

PERIODICAL: Referativnyy zhurnal. Avtomatika i radioelektronika, no. 10, 1961, 10, abstract 10 V85 (Izv. Leningr. elektrotekhn. in-ta, 1960, no. 43, 157-162)

TEXT: Optimum admixture of ingredients for producing Hall emf-elements was investigated. The dependence upon the composition of the following characteristics of the Hall emf-elements is discussed: Temperature behavior of the emf; the resistivity and Hall-coefficient changes in strong fields; sensitivity in terms of voltage and power; equilibrium instability due to temperature effects. A comparison between elements prepared of different materials shows that for high ohmic loads and for strong fields most suitable are elements composed of Si and Ge; for weak fields and low ohmic loads at any field - elements of InAs and $In(As_{0.8}P_{0.2})$. Elements

Card 1/2

31828
S/194/61/000/010/036/082
D256/D301

Some problems of Hall...

prepared of InSb are suitable only for relative measurements or for instruments working at low temperatures. 10 references. [Abstracter's note: Complete translation]

IX

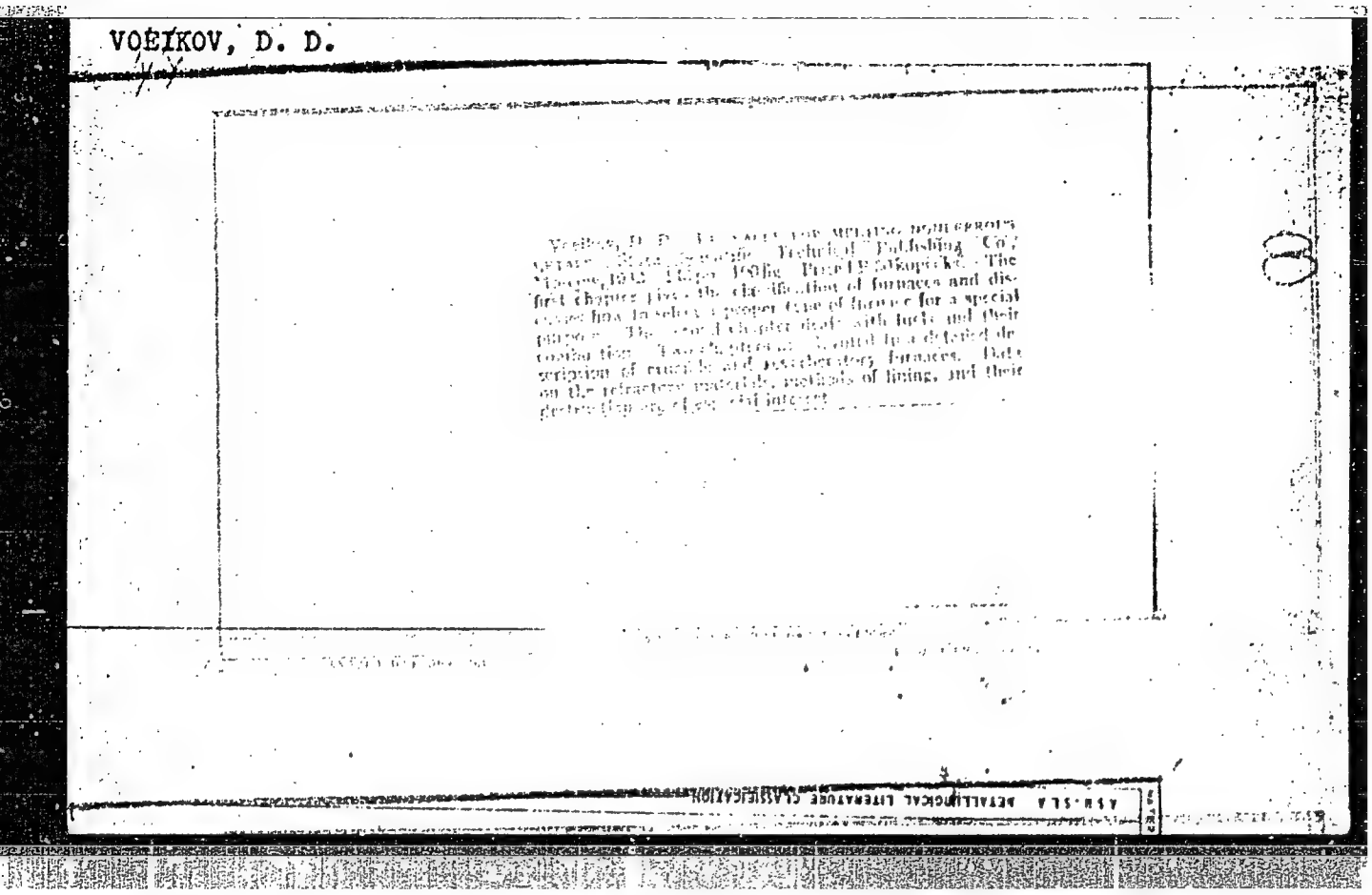
Card 2/2

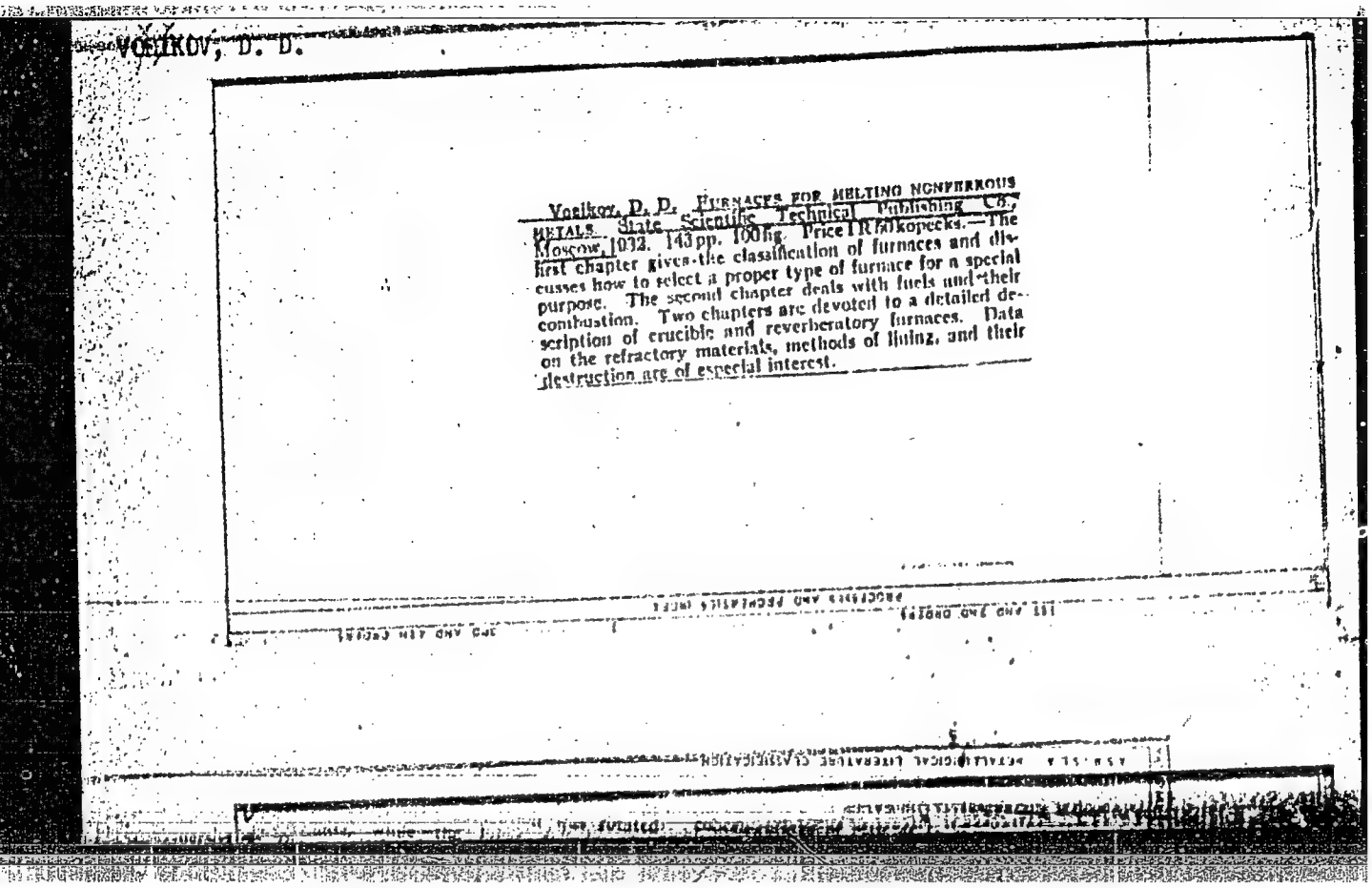
VOYEYKOV, Dmitriy Dmitriyevich; GERTSIGER, Leopol'd Naumovich; KNYAZEV, Konstantin Konstantinovich; LIVSHITS, Il'ya Aronovich; ESSENSON, Al'bert Yakovlevich; POPOV, K.K., red.

[Design of low-frequency generators] Konstruirovanie nizkochastotnykh generatorov. [By] D.D.Voeikov i dr. Moskva, Izd-vo "Energiia," 1964. 225 p. (MIRA 17:7)

VOEIKOV, D. D.

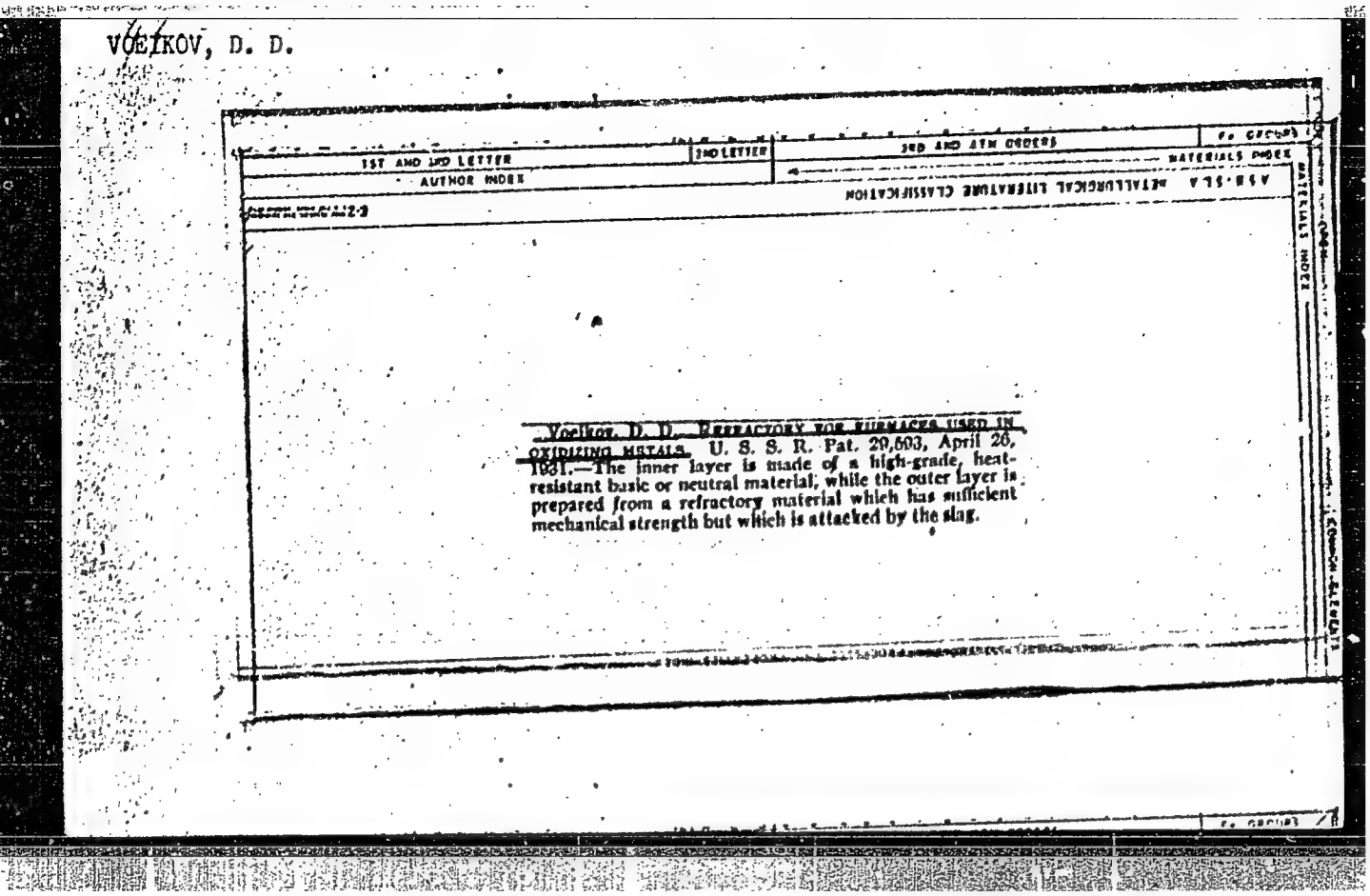
Voeikov, D. D. USING MAGNESITE IN KILNS FUSING COPPER IN THE KRASNYY VYBORZETS WORKS. *Tsvetnyy Metall*, 5 [7], 1629–34 (1930).—The advantage of magnesite over Dinas brick, clay, and quartz is its resistance to basic slag in fusion. It was used with success for walls and arches in kilns refining copper. Its weak points are its sensitivity to temperature changes and dilatation. Dilatation of magnesite occurs in a continuous manner but only during cooling. The apertures must therefore be carefully luted and the kiln cooled slowly when work ceases. An experiment was made to combine magnesite with Dinas brick. An intervening layer of chromite was found unnecessary. To assure strength, the kiln walls were slightly inclined. The thickness of the walls was equal to two brick: a magnesite brick in the interior, then a half Dinas brick, and a half clay brick.


VOEIKOV, D. D.



VOLIKOV, D. D.

Volikov, D. D. FURNACES FOR MELTING NONFERROUS METALS. State Scientific Technical Publishing Co., Moscow, 1932. 143 pp. 100 fig. Price 1 R 50 kopecks.—The first chapter gives the classification of furnaces and discusses how to select a proper type of furnace for a special purpose. The second chapter deals with fuels and their combustion. Two chapters are devoted to a detailed description of crucible and reverberatory furnaces. Data on the refractory materials, methods of lining, and their destruction are of especial interest.



VOEIKOV, D. D.

1ST AND 2ND LETTER | 2ND LETTER | 3RD AND 4TH ORDERS | FO ORDERS

AUTHOR INDEX — MATERIALS INDEX

METALLURGICAL LITERATURE CLASSIFICATION

Voeikov, D. D. Refractory for furnaces used in oxidizing metals. U. S. S. R. Pat. 20,603, April 20, 1931.—The inner layer is made of a high-grade, heat-resistant basic or neutral material, while the outer layer is prepared from a refractory material which has sufficient mechanical strength but which is attacked by the slag.

VOEIKOV, D. D.

Voeikov, D. D. USING MAGNESITE IN KILNS FUSING COPPER IN THE KRASSNY VYDOBYTS WORKS. *Tsvetnye Metall*, 5 [7], 1031–18 (1930).—The advantage of magnesite over Dinas brick, clay, and quartz is its resistance to basic slag in fusion. It was used with success for walls and arches in kilns refining copper. Its weak points are its sensitivity to temperature changes and dilatation. Dilatation of magnesite occurs in a continuous manner but only during cooling. The apertures must therefore be carefully luted and the kiln cooled slowly when work ceases. An experiment was made to combine magnesite with Dinas brick. An intervening layer of chromite was found unnecessary. To assure strength, the kiln walls were slightly inclined. The thickness of the walls was equal to two brick: a magnesite brick in the interior, then a half Dinas brick, and a half clay brick.

VOYEYKOV, D.D.

Methods of increasing balance stability in Hall effect devices. Zhur. tekh.fiz. 28 no.10:2248-2254 O '58. (MIRA 11:12)
(Hall effect)

VOYEYKOV, D. D., Cand Tech Sci -- (diss) "Construction of gaussmeters of increased precision, employing the Hall effect." Leningrad, 1960. 15 pp; (Ministry of Higher and Secondary Specialist Education RSFSR, Leningrad Inst of Aviation Instrument-Building); 200 copies; price not given; (KL, 26-60, 135)

24(3)
AUTHOR: Voyeykov, D.D. SOV/57-28-10-21/40

TITLE: Methods of Increasing the Balance Stability of a Hall Transmitter (Metody povysheniya stabil'nosti uravnoveshivaniya datchikov Kholla)

PERIODICAL: Zhurnal tekhnicheskoy fiziki, Vol 28, Nr 10, pp 2248-2254 (USSR)

ABSTRACT: This is an investigation of some of the causes of the balance instability of instruments used in engineering, the operation of which is based on the Hall- (Kholl) effect. The temperature instability during balancing is one of the principal obstacles to the utilization of such transmitters in precision instruments. As, however, the compensation of this instability in a wide temperature range proves to be difficult it is more convenient to study the causes leading to such instabilities and to examine the possibilities of eliminating them already in the production of the transmitters. In a simplified form a Hall transmitter can be represented by a bridge circuit, the Hall generator being ganged into one of the diagonals. It is shown that the instrument error due to the unbalance of the Hall transmitter is inversely proportional to the field strength and to the stability co-efficient K of the transmitter. K represents the ratio of the

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sensitivity to half the voltage across the current terminals of the Hall transmitter. The larger K, the smaller will be the influence of unbalance of the transmitter upon the instrument error. Thus a stability coefficient as high as possible is one of the basic requirements placed upon the design of a Hall transmitter. The influence of the shape of the transmitter and of the carrier mobility upon the stability coefficient is investigated. The formula (4) deduced for K leads to the following conclusions: 1) In order to increase K and the balance stability the ratio $\frac{l}{a} = 2$, which was recommended by Kuhrt (Kurt) (Ref 1), must be abandoned in favor of a value keeping within the limits of $1 \div 0,5$, a, l, (and d) denoting the dimensions of the transmitter. 2) Apart from an increase in K this choice of dimensions leads to a saving in semiconductor material. 3) K varies as the mobility at otherwise equal dimensions of the transmitter. Transmitters of InSb and InAs are to be preferred to such of n-Ge for measuring weak fields. It is demonstrated that the principal causes for the temperature instability in

balancing Hall transmitters are to be found in the heterogeneities of the crystal lattice of the transmitter material, in the rectifying effects and the insufficient equipotential level of the Hall contacts. If the design is chosen in an effective manner and a corresponding method of production is selected the temperature stability in balancing the transmitters can be considerably increased. A.P. Kalmykov assisted with the production of the samples of Hall transmitters. There are 4 figures, 1 table, and 3 references, 0 of which is Soviet.

SUBMITTED: February 13, 1958

VOYEYKOV, I.D.

Aleksandr Ivanovich Voeikov; personal recollections. Meteor. i gidrol. no.12:15-22 D '58. (MIRA 12:2)
(Voeikov, Aleksandr Ivanovich, 1842-1916)

SOV/50-58-12-3/20

3(0)
AUTHOR: Voyeykov, I. D.

TITLE: Aleksandr Ivanovich Voyeykov (Aleksandr Ivanovich Voyeykov) Personal Reminiscences (Lichnyye vospominaniya)

PERIODICAL: Meteorologiya i gidrologiya, 1958, Nr 12, pp 15-22 (USSR)

ABSTRACT: The article contains the reminiscences about his uncle of a nephew of the above-mentioned famous Russian geographer (1842-1916).

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VOYEYKOV, I.G., master.

Organizing and mechanizing the work of repairing secondary commutation. Energetik 2 no.10:17-19 O '54. (MLRA 7:10)
(Electric switchgear)

Voyeykov, I.G.

AID P - 878

Subject : USSR/Electricity

Card 1/1 Pub. 29 - 11/23

Author : Voyeykov, I. G., Foreman

Title : Improvement of repair work of control and auxiliary switchboards

Periodical : Energetik, 10, 17-18, O 1954

Abstract : The author briefly describes the method applied in overhauling control panels in an electric power station. Four photographs.

Institution : Not given

Submitted : No date

YAROSHEVSKIY, V.A.; VOYEYKOV, V.V. (Moskva)

Method for accelerating the computation of fast quasi-periodic motions by digital computers. Zhur. vych. mat. i mat.fiz. 4 no.1:168-171 Ja-F '64. (MIRA 17:6)

ACCESSION NR: AP4012011 S/0208/64/004/001/0168/0171

AUTHORS: Yaroshevskiy, V. A. (Moscow); Voyeykov, V. V. (Moscow)

TITLE: Method for accelerating computation of fast quasiperiodic motion on a digital computer

SOURCE: Zhurnal vychisl. matem. i matem. fiz., v. 4, no. 1, 1964, 168-171

TOPIC TAGS: digital computer, quasiperiodic motion, second order equation, small parameter, slowly varying function, numerical integration, asymptotic method, machine time

ABSTRACT: Consider a system of equations in which the basic second order equation describes fast quasiperiodic motion and whose parameters are slowly varying variables whose variation is described by a system of first order equations;

$$\frac{d^2y}{dt^2} + \varepsilon f(r_j, y)\frac{dy}{dt} + F(r_j, y) = 0, \quad (1)$$

$$\frac{dr_i}{dt} - \varepsilon s_i(r_j, y) = 0, \quad i, j = 1, 2, \ldots, q. \quad (2)$$

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ACCESSION NR: AP4012011

Here ε is a small parameter, F and s_i are differentiable functions of their arguments. If the functions F, f, s_i explicitly depend on time then one of the variables r_i is "slow time" $\tau = \varepsilon t$, $d\tau/dt = \varepsilon$. For $\varepsilon = 0$ ("frozen system") the first equation describes fast periodic motion. The character of the variation, in time, of the variables y and r_i is illustrated in Fig. 1 on the Enclosure. Each of the variables r_i can be considered as the sum of a slowly varying function and a fast oscillating admixture arising as a result of oscillations of the variable y. As a rule, the solution of the problem by numerical integration of the system (1)-(2) on a digital computer requires large expenditure of machine time because of the fast periodic motion of the variable y, since the number of steps at each period of motion cannot be very small. Therefore methods for accelerating computation, based on the use of an asymptotic method, are very valuable; one uses "contracted" equations, which determine the time dependence of the slowly varying parameters of periodic motion, for example, the amplitude and the rate of phase change. Orig. art. has: 2 figures and 15 formulas.

ASSOCIATION: none

SUBMITTED: 03Nov62 DATE ACQ: 14Feb64 ENCL: 01

SUB CODE: MM NO REF SOV: 004 OTHER: 000

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